

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The Mining Journal is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2090.—VOL. XLV.

LONDON, SATURDAY, SEPTEMBER 11, 1875.

[WITH SUPPLEMENT.] {PRICE SIXPENCE. PER ANNUM, BY POST, £1 4s.

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
Established 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds, (Foreign and Colonial), Railways, Miscellaneous, Insurance, Assurance, Telegraph, Shipping, Canal, Gas, Water, and Dock Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value.

BUSINESS in all COLLIERIES and Iron Shares, and in the principal WAGON and MANUFACTURING COMPANIES of the NORTH of ENGLAND and SCOTLAND.

Mr. J. H. CROFTS, having now established CORRESPONDING AGENCIES in all the Chief Towns of the United Kingdom, is prepared to deal in the various Local Stocks and Shares at close market prices.

COTTON SPINNING Shares Bought and Sold, including those of Oldham, Bury, Heywood, Darwen, Accrington, and neighbouring districts. This description of security can be purchased to pay the investor very fair interest upon outlay.

Accounts opened for the Fortnightly Settlement.

Monthly and Daily Price Lists issued.

Bankers: City Bank, London; South Cornwall Bank, St. Austell.

SPECIAL DEALINGS in the following, or part:—25 Asheton, 30s.; 80 Bog, 2s.; 25 Bampfyde, 10s.; 10 Bilson, £10; 50 Chapel House, £3 15s.; 50 Cardiff and Swansea, £3 12s.; 6d.; 20 Cedar Creek, 15s.; 6d.; 5 Cape Copper, £24; 15 Colorado, £2 15s.; 20 Chontales, 12s.; 6d.; 15 Chicago, 25s.; 20 Don Pedro, £3; 10 Devon Consols, £3 2s.; 6d.; 15 Emma, £1 12s.; 6d.; 20 Eberhardt, £3; 25 East Van, 27s.; 6d.; 10 East Caradon, £1 12s.; 6d.; 30 Flagstaff, £1 7s.; 6d.; 40 Frontino, 22s.; 6d.; 10 Gold, 100 Gold Run, 16s.; 3d.; 80 Javali, 20s.; 10 Langdale Chemical, £5 2s.; 6d.; 10 Lead Chance, £1 2s.; 6d.; 15 Ladywell, £2 18s.; 9d.; 20 Marke Valley, £3; 40 Old Trebutget, 4s.; 9d.; 100 Positive Assurance, 25s.; 20 Pateley Bridge, 20s.; 20 Parys Mountain, 12s.; 6d.; 10 Pennerley, 40s.; 20 Penrith, 12s.; 50 Plynlimmon, 7s.; 10 Richmond, 20s.; 20 Thorp's Gawber, £8 10s.; 20 Van Consols, £2.

N.B.—BUYER of Positive Assurance Shares.

Shares sold for forward delivery (one or two months) on deposit of 20 per cent.

Business on hand in all the leading TIN, COPPER, and LEAD Shares.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER,
44, THREADNEEDLE STREET, LONDON, E.C.

Transacts business in MINING and COLLIERIES Shares of every description. English and Foreign Stocks, Colonial Government Bonds, Railways, Banks, and Miscellaneous Shares, and all Securities dealt in on the London Stock Exchange, for INVESTMENT or SPECULATION.

Purchases and Sales negotiated in Unmarketable Stocks and Shares.

Speculative Accounts opened for the Fortnightly Settlement.

References given and required when necessary.

A Stock and Share List forwarded to bona fide Investors free on application.

Bankers: The National Provincial Bank of England, E.C.

SPECIAL BUSINESS in the undermentioned, at close market prices:—

Asheton.	Emma (Silver).	London Gravel.
Bog.	Flagstaff.	Richmond.
Birdseye Creek.	Frontino.	South Condurow.
Carn Brea.	Gold Run.	Sweetland Creek.
Cape Copper.	Javali.	St. Patrick.
Cathedral (Copper).	Ladywell.	Tankerville.
Chapel House Colliery.	Marke Valley.	Tincroft.
Chicago (Silver).	Pennerley.	Van.
Dolcoath.	Parys Mountain.	Van Consols.
Don Pedro.	Penrith.	West Chiverton.
Devon Consols.	Pateley Bridge.	West Tankerville.
Eberhardt.	Port Phillip.	Wheat Uny.

IMPORTANT—Intending investors should lose no time in securing shares in well selected mines at the low quotations now ruling, as an early and substantial advance may be confidently relied upon. Provided proper discrimination is exercised in the selection, there are, at present few, if any, other securities in the market which offer such a favourable field for investors, and considering the extremely low prices of the majority of shares in sound dividend and progressive mines, anyone investing now has the advantage of a minimum of risk, and will in all probability be enabled to realise handsome profits within a short period.

W. H. B. will be happy to furnish, on application, a list of shares which are likely to have an early rise in market value.

WILLIAM HENRY BUMPUS, SWORN BROKER.
OFFICES—44, THREADNEEDLE STREET, LONDON, E.C.

MESSRS. PYNE AND ASHMEAD,
CITY MINING AGENTS,
LONDON MANAGEMENT OF COMPANIES UNDERTAKEN.
ACCOUNTS AUDITED, LIQUIDATIONS CONDUCTED.
6, BISHOPSGATE STREET WITHOUT, LONDON, E.C.

FERDINAND R. KIRK, STOCKBROKER,
5, BIRCHIN LANE, E.C.

Consols, Foreign Bonds, Railways, and every security quoted on 'Change bought and sold.

Bankers: London and Westminster, and City Bank.

Clients giving the usual "cover" can open accounts for the fortnightly settlement. Coupons collected and drafts cashed free of charge. References given when necessary in most of the leading towns of the United Kingdom. Commission on Railways 6s. per cent.

SPECIAL BUSINESS in Glaisdale Quarry, Alltani Colliery, Eberhardt, Cape Copper, Cardiff, and Chapel House.

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
20, BISHOPSGATE STREET, LONDON, E.C. (Established 19 Years),
sells the following SHARES, at prices annexed:—

25 Asheton, 26s.	30 Flagstaff, £1 7s.	60 Prince of Wales, 3s. 6d.
10 Alltani Colliery.	50 Frontino, 21s.	60 Parys Mountain, 12s. 6d.
15 Bilson & Crump, £10.	20 Hington, 23s. 6d.	60 Plynlimmon, 6s. 9d.
25 Birdseye, £1 12s. 6d.	20 Kingston, 23s. 6d.	10 Richards & Co., £24.
30 Bedford Unit, 17s. 6d.	50 Javali, 14s. 6d.	Richmond, £10.
40 Bog, 7s. 6d.	20 Ladywell, £2 18s. 9d.	75 Rica, 4s. 3d.
20 Chapel House, £2 16s. 3d.	25 Marke Valley, £2 12s.	20 Sweetland, £2 2s.
40 Cathedral, 26s.	15 Monydd Gerdud, £6 1/2	40 So. Ro. Grav., 11s. 6d.
20 Colorado, £2 1/2	20 New Quebrada, £3 16s. 3d.	50 St. Patrick, 22s. 6d.
20 Don Pedro, 11s. 3d.	40 Pennerley, £1 12s.	50 West Maria, 8s.
20 East Caradon, 28s. 9d.	25 Prince Patrick, £3.	15 W. Tankerville, 27s.
20 Emma, £1 12s.	80 Port Phillip, 15s.	100 West Milver, 3s. 9d.
15 Eberhardt, £2 6s. 3d.	70 Penrith, 10s. 3d.	10 W. Kitty (S.A.G.), 2 1/2s.

JOHN RISLEY (SWORN), STOCK AND SHARE BROKER,
77, CORNHILL, LONDON.

Turkish Six Per Cents. of 1854, 1858, 1862, 1865, 1871, and 1873 specially recommended; also Wheel Grenville, Treleigh Wood, Parys Mountain, Wheel Peever, and Crebhor shares.

Business transacted at the following rates of commission:—Foreign Stocks, 1/4 per cent.; and Mining Shares of £4 each and upwards, 1 1/4 per cent.; under £4, 1s. per share.

MESSRS. ENDEAN AND CO., STOCK AND SHARE DEALERS,
85, GRACECHURCH STREET, LONDON, E.C.

Government and every negotiable Stock dealt in for cash or account. Orders and telegrams punctually attended to.

MR. THOMAS THOMPSON, JUN., 1, PALMERSTON BUILDINGS, BISHOPSGATE STREET, LONDON, E.C.

Some valuable hints as to the purchase of mining shares will be found in Mr. Thompson's "Investment Circular" for Sept. now ready, post free, price 6d.

MR. GEORGE BUDGE, STOCK AND SHARE DEALER,
No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 25 Years) has SPECIAL BUSINESS in—

20 Devon Consols, £3 2s. 6d. prem.; 50 Monydd Gerdud, £12 1/2; 100 Prince of Wales; 25 Ladywell, 10s.; 10 Glaisdale, 19s.; 20 Thorp's Gawber, £2 1/2; 75 St. Patrick, 21s. 6d.; 30 Pennerley, £2 1/2; 60 Cakemore Colliery; 25 Western Andes, £5 1/2; 40 Cardiff and Swansea, £3 1/2; 10 Van; 150 Positive Assurance; 100 New Pacific, 2s.; 40 Llandudno; 120 South Aurora, 10s.; 60 Alltani; 100 West Milver, 3s.; 30 Grog, £1 1/2; 40 Globe Telegraph Ordinary, £2 1/2; 200 Javali.

There is a great future in store for this colliery. The new works are being pushed on with a view to raising 1000 tons per day, when it will be one of the best paying colliery companies. Present profits are most satisfactory. The dividend of 10 per cent. was paid on the 31st ult. Shares are rising. I have business in them at the closest price.

INVESTMENTS IN STOCKS AND SHARES.—
BRITISH AND FOREIGN STOCKS AND SHARES BOUGHT AND SOLD.
List of Prices and other information sent on application.

Bankers: The Alliance Bank (Limited), London.

MR. P. WATSON, 79, OLD BROAD STREET, LONDON, E.C.
(Close to Stock Exchange.)
FINANCIAL OPERATIONS NEGOTIATED.

MR. ALFRED E. COOKE, STOCK AND SHARE DEALER,
76, OLD BROAD STREET, LONDON.
(Established 1853.)

Mr. COOKE can sell the following Shares, and guarantees delivery, free of commission:—

50 Bampfyde, 22s. 6d.	25 Llanrwst Lead.	100 Positive.
25 Cathedral, 26s.	40 London & California.	50 Plynlimmon, 7s.
50 Caldbeck Fells, 8s. 6d.	15 Monydd Gerdud, £6 1/2	25 Richmond Consol.
40 Frontino, 20s. 6d.	50 No. Prince Patrick.	25 Saint Patrick, 22s. 6d.
30 Glaisdale, 20s.	15 Pateley Bridge, £7.	25 Thorp's Gawber.
100 Javali.	25 Penrith.	40 West Maria.

Shares having no quotations affixed may be had at lowest market prices.

Business transacted in nearly all Coal, Iron, Manufacturing, and Miscellaneous Shares.

TIN MINE FOR SALE, with 45 heads of stamps, and all other requisite machinery, on most advantageous terms.

Now ready, Mr. COOKE's Monthly Circular, with valuable tabulated form of investments; most useful for reference. Send address, with stamp.

MR. T. E. W. THOMAS, SWORN SHARE BROKER,
3, GREAT WINCHESTER STREET BUILDINGS, E.C.
Established 1857.

The following are the latest prices at which business could be done. Where the difference between the buying and selling price is wide transactions may be effected at an intermediate price:—

Buyers.		Sellers.	
Birdseye Creek.....	1 1/2	Port Phillip.....	13s. 9d. 15s.
Bog.....	7s. 8s.	Prince of Wales.....	4s. 6s.
Carn Brea.....	46 47	Richmond.....	2 9 1/2 10 1/2
Chapel House.....	3 1/2 4	Roman Gravel.....	11 11 1/2
Devon Great Consols.....	2 1/2 3	St. Patrick.....	1 1 1/2
Dolcoath.....	45 47	South Caradon.....	15 1/2 16 1/2
Don Pedro.....	8s. 11s.	South Crofty.....	22 24
Eberhardt.....	8 1/2 8 1/2	So. Roman Gravel.....	10s. 12s.
East Caradon.....	1 1/2 1 1/2	So. Prince Patrick.....	13 1/2 2 1/2
East Lovell.....	6 1/2 7 1/2	Sweetland Creek.....	2 1/2 3
East Pool.....	14 1/2 15 1/2	Tankerville.....	10 1/2 11
East Van.....	1 1/2 1 1/2	Tincroft.....	23 25
Flagstaff.....	1 1/2 1 1/2	Van.....	24 26
Gawton.....	12s. 6d. 15s.	West Chiverton.....	16 17
Hington Down.....	1 1/2 1 1/2	West France.....	8 9
Javali.....	14s. 15s.	West Maria.....	6s. 8s.
Marke Valley.....	2 1/2 2 1/2	West Tankerville.....	13 1/2 1 1/2
New Quebrada.....	3 1/2 4	Wheel Crebhor.....	3 3 1/2
Parys Mountain.....	11s. 6d. 12s. 6d.	Wheel Jane.....	3 3 1/2
Pateley Bridge.....	6 7	Wh. Kitty (St. Agnes).....	2 1/2 2 1/2
Pennerley.....	1 1/2 1 1/2	Wheel Uny.....	2 1/2 3
Penrith.....	9s. 6d. 10s. 6d.		
Plynlimmon.....	6s. 7s.		

MR. WILLIAM WARD
(LATE WARD AND LITTLEWOOD),
CROSBY HOUSE,
95, BISHOPSGATE STREET WITHIN, E.C.,
STOCK AND SHARE BROKER.

MR. E. J. BARTLETT, STOCK AND SHARE DEALER,
No. 30, GREAT ST. HELEN'S, LONDON, E.C. (Established 10 years),
has SPECIAL BUSINESS in South Condurow, Prince Patrick, Wheel Kitty, Penhalls, and Chapel House Shares at close prices.

G. E. SIMPSON, STOCK AND SHARE DEALER,
6, GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C.

MESSRS. A. ENDEAN, FISHER, AND CO., STOCK AND SHARE DEALERS,
3, LOMBARD COURT, LOMBARD STREET, E.C.
Bankers: London and Westminster, Lothbury.

MESSRS. W. J. TALLENTINE AND CO.,
STOCK AND SHARE BROKERS,
30, CHANGE ALLEY, CORNHILL, LONDON, E.C., transact business in Stock Exchange Securities and Mining Shares of every description.

A Selected List of Safe Investments forwarded to intending investors post free upon application. Fourteen years' experience.

MR. W. TREGELLAS, 122, BISHOPSGATE STREET WITHIN, E.C.,
Deals in all descriptions of Stocks and Shares at close market prices.

MESSRS. HARLAND AND CO., STOCK AND SHARE DEALERS,
235 and 236, GRESHAM HOUSE, LONDON, E.C.
Bankers: London and County Bank.

Messrs. H. and Co. wish to direct attention to the DIVIDENDS declared by CHAPEL HOUSE and ALLTANI COLLIERIES, and will be happy to supply shares in these companies at market rates.

SPECIAL BUSINESS in Patent Ligno Mineral Paving Company.

MESSRS. HARVEY, JORDAN, AND CO.,
MINING ENGINEERS AND AGENTS, ACCOUNTANTS, AUDITORS,
MANAGERS OF PUBLIC COMPANIES, &c.
In connection with Messrs. TEAL, FOSTER, and Co., Georgetown, Colorado.
Mineral Properties Inspected.

LONDON OFFICES—30, MOORGATE STREET, E.C.
THE LANTIRISANTIN TIN PLATE WORKS.
THE PLANET SILVER MINING CO.

JAMES STOCKER, STOCK AND SHARE DEALER,
2, CROWN COURT, THREADNEEDLE STREET.
Bankers: London and Westminster.

J. S. TRANSACTS BUSINESS in Railway Shares, Stocks, Debentures, Bank, Telegraph, Insurance, Gas, and Miscellaneous Shares having no regular quotation.

Accounts opened for the fortnightly settlement, and shares sold for forward delivery on receipt of cover.

SPECIAL BUSINESS in the following British and Foreign Mines, Colliery, and other Shares:—

10 Birdseye, 33s.	20 Grogwinton.	50 Rio Tinto.
15 Bilson & Crump.	50 Hington, 21s. 9d.	120 Rica, 4s. 6d.
75 Bog, 7s. 9d.	20 Hornachos.	75 Rookhope.
40 Caldbeck Fells.	15 Hudson's Bay.	30 Sweetland, £2 18s. x. d.
45 Clec Hill, 4s. 6d.	100 Javali, 15s.	25 So. Carn Brea, 35s.
40 Cathedral, 26s. 6d.	35 Last Chance, 22s. 6d.	40 So. Roman Grav., 15s.
20 Cedar Creek, 15s. 9d.	20 Ladywell, £2 16s. 9d.	40 St. Patrick, 22s.
25 Chicago, £2 1/2	50 Malpas, 10s. 6d.	20 Thorp's Gawber, £7 1/2
75 Chontales, 12s. 6d.	30 Marke Valley, £2 18s. 9d.	60 Tincroft, 23s.
60 Chapel House, £3 16s. 3d.	30 Native Guano.	15 Tankerville, £11.
45 Colorado, £2 13s. 9d.	65 New Quebrada.	10 Tincroft.
20 Cook's Kitchen.	115 New Rosario, 7s. 6d.	50 Van Consols, 37s. 6d.
90 Don Pedro, 11s. 6d.	60 Old Trebutget, 4s.	5 Van, £24 1/2
20 Devon Cons., £2 16s. 9d.	40 Pateley Bridge.	10 West Chiverton.
30 East Caradon, £1 1/2	60 Penrith, 10s. 6d.	50 West Maria, 7s. 9d.
40 East Van.	60 Pennerley, 11s. 9d.	20 Western Andes, £5.
35 Emma, £1 1/2	60 Port Phillip, 15s.	15 Wheel Kitty, £3.
60 Flagstaff, 25s.	60 Plynlimmon, 6s. 9d.	40 W. Tankerville, 25s. 9d.
60 Frontino, 20s. 6d.	70 Parys Mountain, 12s.	15 Wheel Jane.
70 Gold Run, 16s. 6d.	90 Prince of Wales, 3s. 6d.	30 Wheel (Grenville).
10 Great Laxey.	40 Pr. Patrick, £2 18s. 9d.	10 Wheel Uny.
60 Great W. Van, 6s. 6d.		

MR. T. P. THOMAS, MINING AGENT AND AUCTIONEER,
3, CROWN COURT, THREADNEEDLE STREET, LONDON.
Business transacted in Mining and Colliery Shares of every description.
T. P. THOMAS is a BUYER of Tylwyd Shares, at 15s. per share.

MR. CHARLES THOMAS
MINING AGENT, STOCK AND SHARE DEALER,
8, GREAT ST. HELEN'S, LONDON, E.C.

MESSRS. A. W. THOMAS AND CO.,
10, COLEMAN STREET, E.C.,
MINING AGENTS, AND STOCK AND SHARE DEALERS.
Price Sixpence.
"INVESTMENTS AND SPECULATIONS FOR 1875."

HENRY CAMERON AND CO., STOCK AND SHARE BROKERS
AND DEALERS, 36, NEW BROAD STREET, LONDON, E.C.
Have SPECIAL BUSINESS in Sound Dividend-paying Cotton Manufacturing and Spinning Companies. Also, in non-risky Mining Shares—as Chicago Silver, Gold Run, and other sure Mines.

Cameron's "Investment Gazette" sent on receipt of three stamps.

MESSRS. MARSHALL, BROWN, AND CO.,
STOCK AND SHARE DEALERS,
63, CORNHILL, LONDON, E.C.

GROSVENOR, ENTWISLE, AND CO.,
(LATE GROSVENOR AND CO.),
STOCK AND SHARE BROKERS,
88, PORTLAND STREET, MANCHESTER.

MESSRS. J. TAYLOR AND CO., 86, LONDON WALL, E.C.,
and MINING EXCHANGE, SOUTH KING STREET, MANCHESTER,
MINING ENGINEERS AND INSPECTORS.
Business done in all descriptions of Stocks and Shares.

MR. R. PERCY ROBERTS,
FINANCIAL AGENT,
60, ENGLISH STREET, CARLISLE.

MR. TIMOTHY HUGHES,
59, SEEL STREET, LIVERPOOL.

The Registered Office of the PRINCE PATRICK GROSVENOR, WEST BRYN CELYN CENTRAL FOXDALE, and GREAT EAST FOXDALE LEAD MINING COMPANIES (LIMITED).

Full information respecting these Mines forwarded on application.

RELIABLE INFORMATION given respecting Mines in the Isle of Man, Flintshire, and the neighbouring districts.

MR. EDWIN SKEWIS, WASHFORD, TAUNTON,
MINING AND MECHANICAL ENGINEER,
SURVEYOR AND VALUER.
Engineering Plans and Sections. Specifications and Estimates prepared for all kinds of Engineering Work. Surveys of every description made and levels taken. Mines managed. Machinery erected. Reports on Mineral Properties. References. IRON ORES A SPECIALITY.

CAPTAIN ABSALOM FRANCIS,
MINING AGENT, ENGINEER, AND SURVEYOR.
GOGINAN, ABERYSTWTH.

MR. JOHN SPRAGUE, late General Manager of the El Dorado
Gold Mining Company, Nova Scotia, SEEKS SIMILAR EMPLOYMENT
in any healthy part of the world. First class references.
Address, Tenby Villa, Holloway, N., London.

WANTED, to PROVE a SILVER-LEAD MINE, on which four Gentlemen have expended £2500, and for which one-third of the Mine will be reserved, FIVE THOUSAND POUNDS for the remaining two-thirds. Lode 40 ft. wide; good machinery; and engine-shaft sunk 30 fms. under adit. The trial is pronounced by the best authorities as almost certain to prove as rich a Mine as any worked in the Principality.

All information and particulars may be had by addressing, "C. R. R. and F., MINING JOURNAL Office, 26, Fleet-street.—Sept. 1, 1875.

WANTED, FOR PUMPING, A WATER-WHEEL, in good condition, 32 ft. diameter, 4 ft. 6 in. breast.

Apply, stating lowest price, to the Harehope Gill Mining Company (Limited), Blackhill, Durham.

WANTED, a SECONDHAND ENGINE, for drawing ores to surface, with cages for men ascending and descending, complete; 70 horse power effective force. Must be in good condition.

Full particulars and lowest price to be sent to "C. C. C., Commercial Exchange, Newcastle-on-Tyne.

TIMBER WIRE FENCE POSTS WANTED,
PLAIN OR CROSBOTED.
TWENTY-FIVE THOUSAND, or any less number, 6 feet long, 6 inches by 3 inches half round, or 9 inches diameter, posts quartered, or equal section, delivered free ex trucks at Swindon Junction, Marlborough, or Savernake Stations of the Great Western Railway, or Andover Junction of the London and South-Western Railway, as may be required.

Immediate offers invited, stating quantity, description, and section, time for delivery; if executed, or not.

Address, THE IRON WIRE, WIRE ROPE, AND FENCING COMPANY, 1, Victoria-street, Westminster Abbey, S.W.

TO MINING AND RAILWAY COMPANIES, AND CONTRACTORS.—A late MANAGER of GOLD MINES in SOUTH AMERICA is desirous of a RE-ENGAGEMENT. Speaks Spanish, French, and Portuguese; understands the extraction and treatment of auriferous ores; and is a good accountant and surveyor. Eight years' experience in Spanish and Portuguese America on Railway and Mining Works. Highest references.

Address, "Passo," MINING JOURNAL Office, 26, Fleet-street, London.

REMOVAL OF OFFICES TO 76, CHEAPSIDE,
From 21, Gresham-street, London, E.C.

WIRE TRAMWAYS ARE NOW IN OPERATION IN ALL PARTS OF THE WORLD.
By recent improvements, inclines as steep as 1 in 3 can be surmounted, and railways up to 200 yards can be crossed without intermediate support. Quantities from 50 to 500 tons daily can be thus transported.

For full information, and references to examples at work, apply to the Engineer, W. CARRINGTON, 76, CHEAPSIDE.

TO MINING COMPANIES.
AN EXPERIENCED MINING ENGINEER, who has been for the last seven years occupied in SPAIN, is desirous of OBTAINING THE MANAGEMENT OF MINES in that country, or REPRESENTING FIRMS wishing to PURCHASE MINERALS, or NEGOCIATE for MINES. He speaks German, Spanish, and French, and can give the highest references as to his ability and integrity.

Address, Messrs. CHARLES HOPPE and Co., Santander.

Before fully engaging himself, he is at liberty to make any Surveys and Reports in Spain or Portugal.

FOR SALE, AN EXTENSIVE and PROSPEROUS SLATE and SLAB QUARRY IN NORTH WALES.
Apply, "O.," MINING JOURNAL Office, 26, Fleet-street.

VALUABLE COPPER AND SILVER-LEAD MINES.
FOR SALE, THIRTY-FIVE MINING CONCESSIONS,
containing COPPER and SILVER-LEAD ORES of extreme richness, the former yielding up to 60 per cent. COPPER, and the latter up to 1 1/2 per cent. SILVER.

Apply to ALEXANDER LESLIE, Ashley-terrace, Aberdeen.

950 BLAKE'S PATENT ORE-CRUSHERS
NOW IN USE.
For catalogue, apply to—
MR. H. B. MARSDEN, 80HO FOUNDRY, LEEDS,
Only maker in the United Kingdom.

NOTICE TO BRITISH AND FOREIGN MINING COMPANIES.

CONTRACTS FOR HIGH AND LOW CLASS ORES, HALVANS, SKIMPINGS, BURNT LEAVINGS, &c.

TENDERS ARE INVITED FROM MINES IN A POSITION TO SUPPLY THE ABOVE.

Forms of tender and all information may be obtained on application to the Profit Union (Limited), 8, Union-court, Old Broad-street, London, E.C.

STEPHEN H. EMMENS, Managing Director.

THE METAL TRUST.

This Trust has been instituted under the auspices of the Profit Union (Limited) for the purpose of providing funds for the erection of works adapted to the treatment of low-class metallic ores by Emmens' "Nascent Copper" and other processes.

At the Emmens United Mines and the New Consols Tin and Arsenic Works (Limited) this treatment has been for some time past in operation to the extent of upwards of 800 tons of ore monthly. The result has been to prove, on a large scale, that by this means ore containing as little as 1½ per cent. of copper and 5 per cent. of silver to the ton may be treated at an average profit of 10s. per ton, and that this profit is proportionately augmented with every increase in the richness of the ore. Much of the poor ore treated at the Emmens United Mines, for example, yields a net profit of from 20s. to 30s. per ton.

It must be remembered that the low-class ores in question are not sufficiently productive to be saleable in a raw state, and are usually thrown aside as waste, the quantity of such wastes produced at most mines being far in excess of the ore actually sent to market. Hence the returns of these mines would be materially increased by the adoption of the "Nascent Copper" process.

The difficulty to be contended with is simply a want of capital for erecting the necessary works, and if this capital could be advanced there are numerous mines ready to offer unimpeachable security and very advantageous terms for its employment in this manner, as they would thus soon be enabled to enter the dividend-paying list.

To meet this requirement the Metal Trust has been formed for the issue of bonds, secured upon the buildings, plant, and machinery provided and acquired from time to time by the Profit Union (Limited) in the execution of contracts entered into with various mines for the treatment of metallic ores.

These bonds are issued to bearer for the sum of £10 each, and the price of issue is £8, payable as follows:—

- £1 on application.
- 2 on allotment.
- 5 three months after allotment.

Coupons for interest at 8 per cent. per annum, payable half-yearly are attached to the bonds, and redemption at par (£10 per bond) is effected by annual drawings, extending over ten years from the date of issue, the bonds issued in each year constituting a fresh series for this purpose.

After providing for interest and redemption, and for the expenses of management (limited to 2 per cent. upon the amount of bonds current from year to year), any balance of profit that may remain from the carrying out of the contracts is divided into two equal moieties, whereof one-half is paid to the Profit Union (Limited), and the other is paid to the Metal Trust, the additional bonds thus created being drawn for and distributed by way of bonus amongst the existing bondholders.

The accounts of the Trust will be audited once in every six months by Messrs. Johnstone, Cooper, Wintle, and Co., public accountants, of 3, Coleman-

street Buildings, E.C., and a copy will be forwarded to every bondholder on application.

Dr. Stephens H. Emmens, the managing director of the Profit Union (Limited), and the proprietor of the Emmens United Mines, near Callington, in Cornwall, will superintend the business details, and will be assisted by the following gentlemen, whose skill and experience are well known, viz.:—

Dr. J. W. Perkins, F.R.S. (late of the New Consols Tin and Arsenic Works (Limited)).

Capt. H. Bennett (Emmens United Mines).

Capt. W. Knott (Emmens United Mines).

Capt. G. Spargo (late of the Newton Heath Reduction Works).

Capt. Thos. Neill (Harewood Consols).

It will thus be evident that the Metal Trust is an industrial undertaking of a legitimate character, and must confer great benefits upon the mining establishments of the country. At the same time its bonds constitute a perfectly safe investment, as they are secured upon substantial property; while the terms of interest, redemption, and bonus are such as to render them more than usually remunerative.

Without attempting to institute invidious comparisons, it may be observed that the Metal Trust is not loaded by any promotion money or preliminary expenses, and that the bondholders will have the satisfaction of knowing that their subscriptions are wholly devoted to the useful and profitable purpose for which they are contributed.

Application for bonds must be made on the accompanying form, which together with the deposit, must be forwarded to the undersigned, at the office of the Profit Union (Limited), 8, Union Court, Old Broad-street, London, E.C. August, 1875. By order, STEPHEN BOOME, Secretary.

FORM OF APPLICATION FOR BONDS OF

THE METAL TRUST.

To the Managing Director of the Profit Union (Limited).

Sir,—Having paid you £ , being a deposit of £1 per bond upon bonds of £10 each of The Metal Trust, I hereby request you to allot me such bonds, and in the event of your not doing so I agree to pay you the further sum of £7 per bond by the instalments set forth in the annexed prospectus of the Trust.

Full name
Address
Occupation

Date
Received of Mr. the sum of £ , being a deposit of £1 per bond in respect of an application for bonds of the Metal Trust.

FORM OF RECEIPT.

(To be signed by the Bankers of the Profit Union, Limited, and returned to the applicant.)

Received of Mr. the sum of £ , being a deposit of £1 per bond in respect of an application for bonds of the Metal Trust.

IRON AND STEEL INSTITUTE.

The annual provincial meeting of members was commenced in the Lecture Hall of Owen's College, Manchester, on Monday, Mr. WILLIAM MENELAUS, President, in the chair.

Amongst those who were present at the opening were—the Mayors of Manchester and Salford, the Bishop of Manchester (Dr. Fraser), Sir Joseph Whitworth, Principal Greenwood, Mr. H. Bessemer, Mr. Isaac Lowthian Bell, M.P., Prof. W. C. Williamson, and many others occupying prominent positions in connection with science and industry.

In welcoming the Institute to the city, the MAYOR of MANCHESTER remarked that when he remembered the immense magnitude of the firms with which they were connected, and the hundreds of thousands of men who were engaged in the trade, he could not but recognise the importance of the Institute. He knew it was not within their limits to touch upon questions affecting wages, or the co-operation of capital and labour. They were an association for the promotion of scientific research and technical advancement in connection with the manufacture of iron and steel. He bade them a most hearty welcome to Manchester, and said that if in his capacity as Mayor he could do anything to promote the usefulness and the pleasure of the visit he should be most happy.

The MAYOR of SALFORD (Mr. Harwood) on behalf of the people of Salford, welcomed to the city of Manchester the members of the Iron and Steel Institute. That association was composed of gentlemen possessing the highest scientific knowledge, and in turning science to their benefit they at the same time added very materially to the wealth of the nation.

The BISHOP of MANCHESTER, who was very warmly received, and is highly popular in the district, remarked that he really felt that he was intruding into a sphere in which he had no business, and as he had got somewhat of the character in Manchester of talking about all sorts of things about which he was not supposed to know anything, he confessed that he rather shrank from the responsibility of addressing the practical intellects that he knew he should see around him. At that moment he hardly knew in what capacity he appeared there, whether as one of the governors of the College, who had the privilege of welcoming the Institute, or whether as the bishop of the diocese; but in both capacities he heartily congratulated Manchester on having the Institute in its midst. As he ran over the list of members he had been struck with a phenomenon of the age. On the first page he saw that they had had for their first president the Duke of Devonshire, then Mr. Henry Bessemer, and afterwards Mr. I. Lowthian Bell. And when he looked at the constitution of the Institute he found it consisted of three classes—persons practically engaged in the manufacture of iron and steel, persons of scientific attainments in metallurgy, and honorary members not to exceed 20. Of course, he expected to find that the Duke of Devonshire was an ordinary member, and therefore he was a person practically engaged in the iron and steel manufacture, or else, as they all knew, a person of high attainments in this particular department of science. It seemed to him to be the fact that the old order had changed, and given place to the new, and he was rather inclined to think that the new order, perhaps, was somewhat better than the old; for it was not altogether a change for the worse to find that whilst "dukes" were formerly leaders of armies only, the dukes of the nineteenth century are leaders of the army of trade and commerce. Virgil described the birth of a boy in whose beneficent reign the whole character of the earth should be changed, and the iron age should give place to the age of gold. They certainly had not reached that time yet. A great statesman had said that this was an age of "blood and iron." We in England had left out the blood, and the longer we could leave it out the better, but this certainly was an age of steel and iron, and these metals seemed to be capable of feats which our forefathers never could have dreamed to be possible. He imagined that if Drake, or Frobenius, or any of the great navigators of Queen Elizabeth's time, had been told that ships could be sent to sea, and could float with 5 or 6 in. of armour on their sides, they would have laughed in the face of the person who told them, and would have believed he was playing on their credulity. True, we had not succeeded altogether with our iron-plated ships, as the unfortunate misadventure in the Irish Channel proved. He did not know how it happened, but their ingenious contrivances were not always applicable at the precise moment when they were wanted. He found it stated that if a certain door in a certain bulkhead had been shut the Vanguard need not have gone to the bottom, where she was likely to remain, it seemed, until the next winter was past. It gave him profound pleasure, looking at the meeting before him, to see the sort of stuff of which the English nation was made. He felt proud of his country; and when he saw before him a body of gentlemen who were engaged in one of the most important and sustaining industries of the country, he confessed that he looked upon them with very profound respect. Whatever they might think of theologians, and they might sometimes think that they got up sometimes into the clouds and talked about things which they did not understand—there could be no doubt that the Institute took their stand upon the earth, and certainly were engaged in matters of a very real and practical character. He thought that in that respect they who had to teach religion might take a lesson from them, and that the closer they kept to the ground and the less they soared up into the altitudes the better, perhaps, they would profit those who attended to them. He hoped they would all feel, not only in their discussions but in their respective industries, that they had each in their own persons to maintain the character of England in the markets of the world.

The scrutineers' report showed that 58 new members had been elected, and Mr. Jones (the secretary) read the names of 15 other gentlemen who had applied for admission too late for the scrutiny, and said that the number of members was now about 900.

"The Application of High-Pressure Steam to Quadruple Engines" was the subject of the first paper, by Mr. DANIEL ADAMSON, F.G.S., of Hyde Junction (the Chairman of the reception committee). The quadruple-action steam-engines are used for driving a cotton-mill, having 48,096 spindles, with all the requisite preparation, and are

driven by steam produced from two steam-boilers of the double-flue Lancashire type, each 30 ft. long by 7 ft. in diameter, having two flues each, 2 ft. 10 in. outside diameter, and crossed by five conical tubes welded solid into the flue-rings. The blow-off pressure of safety-valves is fixed at 100 lbs. per square inch. The shell and fire-boxes of these boilers are made of steel plates manufactured by the Barrow Hematite Steel Company (Limited). The boiler ends are made of iron plates welded up into one piece, and stay-bolts with gusset and longitudinal stays, attached being added to give great strength, with a margin of elasticity secured by the flange joint, to meet the ever-varying changes produced by the varying temperature of the fires or fire, as well as the change of heat caused by the varying pressure and consequent temperature of steam, this latter change being most noticeable and injurious when steam is being got up from cold water, and the more quickly this is accomplished the more manifest are the evils arising from a disturbed and irregular temperature in the entire boiler structure. Part of the use of the cross conical tubes in the flues is to neutralise the variable heat by stimulating a circulation of the water in the boiler. The first heat from the fire striking the cross-pipes renders the water contained in them specifically lighter than the water at a corresponding level around the flues, and hence the heated water flows up and out of the pipes, while the colder passes in, thus contributing to establish a uniform temperature in the interior of the boiler. The steam is taken off through an anti-priming pipe fixed inside of the boiler, and coupled to the steam nozzle seating. The feed-water enters at the front end through a check valve, and is discharged by a distributing perforated feed-pipe, this pipe and check-valve being fixed about 2 in. above the top of the flues. On the opposite side of the front end, corresponding to the check feed, is fixed a scum tap coupled to a perforated trough pipe, passing along inside of boiler to blow off any matter floating on the surface of the water when the boiler is at work; this, with the blow-off tap fixed to the bottom of the front end of the boiler, can be used to discharge the sedimentary deposit from the bottom, and so materially contribute to keep the boiler clean, and in working order. The feed-water is heated by "Green's Economiser." The total heating surface in the two boilers is 1712 square feet, and the total area of fire-grate 86 square feet. With respect to quadruple action engines, the two horizontal cylinders of the quadruple engine are placed side by side, each, coupled to cross-head and parallel motion and forward by connecting rod to crank-pin in the usual way, and this system of applying the power from Nos. 3 and 4 cylinders is repeated, so that Nos. 1 and 2 constitute one engine, and Nos. 3 and 4 the other, the balance-cranks being fixed at right angles, which causes a somewhat unsatisfactory action between Nos. 2 and 3 cylinders, but this in engines to drive a cotton mill is said to ensure uniformity of motion, which, on the work done, more than compensates for the irregularity of steam action between Nos. 2 and 3 cylinders. The mechanical action of the quadruple engine is admirably adapted for producing a uniform power, such as is required in a cotton, woolen, or flax mill, or for the grinding of corn, the force on the crank-mill being nearly the same in every portion of a revolution, and with four pistons between the boiler pressure and the condenser any chance of leakage of steam (without full power) is proportionately provided against. No provision need be made in the strength of the working parts beyond security to drive a uniform power by a uniform force. Mr. Adamson sums up his conclusions as follows:—Could the whole boiler manufacture of this country be lifted up to a high dependable class of pure engineering work by upholding the rude, barbarous method of penetrating rivet-holes, and all its irregularities, by the use of the drill, whereby true parallel rivet-holes can be secured, cylindrical and exactly at right angles to the plates, or in true radial lines, as the case may be, boilers being thus made by engineers of recognised skill and care, 100 to 150 lbs. steam pressure may be most safely used, and with less risk than the present system admits of carrying 50 lbs. per square inch on stationary boilers. Carrying this into all our practice, using the multiple system of steam-boilers, with all the refinements of superheating in the lower range of pressure between cylinders, running the hot steam from the cylinders from cylinder to cylinder with every possible care, under such conditions there could be no doubt that the manufacturer and user of steam-power in this country would get his work performed by 1 lb. to 1½ lb. of coal per horse power per hour at most. The great importance of this subject must be impressed upon us all, if we consider that a sixth of the coal raised in this country at the present time is consumed to drive steam-engines for manufacturing purposes. Taking the total coal raised at 130,000,000 tons per annum, and a sixth, or (say) about 21,000,000 tons now used, could be, by better boilers and more scientific engines, reduced to 7,000,000, the saving to the country of 14,000,000 tons at the rate of 4s. per ton would give the large amount of 7,000,000,000, sterling, besides the saving in wear and tear, and wages paid for the wasteful destruction of so much coal. By these two latter items 9d. per ton further would be saved on the 14,000,000 tons, making a sum of 525,000,000, sterling, or a gross total of 7,525,000,000. Such is not only possible but practicable, and from its importance demands the most devoted attention of all skillful engineers who wish well for their country.

Mr. ALDERSON, engineer to the Royal Agricultural Society, expressed regret that the papers were not printed beforehand and circulated among the members, so that they might come prepared with facts. It was almost impossible to discuss a paper so valuable as this without some such preparation.

The PRESIDENT said it was the rule of the Institute to print and circulate papers before the meetings, but in some cases the secretary found it impossible to do so. But they generally allowed the discussion of valuable papers to extend over two meetings, and they might do so with this paper.

Major HESKETH considered that Mr. Adamson had taken a sanguine view of the capacity of multiple engines, but as the general consumption of coal per indicated horse-power was nearer 4½ than 4½, he thought there was some room for a great saving, such as he suggested. The amount of horse-power acquired for driving multiple engines, the possibility of starting engines at once with so small a cylinder as No. 1; and the means of getting up the required velocity, and of regulating the engines, were questions which were suggested to him by the paper, and which he should like to have more information upon.

Mr. T. B. CRAMPTON thought that Mr. Adamson had complicated the matter by confusing the boiler question with that of the consumption of fuel. It was a great error not to separate the boiler from the engine. They did not wish to know about the boiler when they were discussing the quantity of power generated by a given amount of fuel; they wanted to know what quantity of water was being used in making the horse-power. Having got the water, it was for the boiler-maker or engineer to design a boiler to evaporate the greatest quantity of water with a given quantity of fuel. They had only to deal with the steam-engine, and the steam-engine itself, and the quantity of water it used; therefore it was not necessary to mix up in this question Welsh coal or any other kind of coal.

Sir J. G. M. ALLEN, Bart., wished to point out that they had waste heat to deal with. To many of them it paid to put up a boiler in order to absorb the waste heat. When they came to use Siemens' furnace for heating iron they would not have the waste going up the chimney, and he thought they would find that they were beginning to economise. There were several slow engines now put up, where the compound system had been introduced, but he should like to ask Mr. Adamson whether he had considered the surface condenser, for in designing work of that kind he (the speaker) had thought it well to introduce the surface condenser. They had to use costly boiler compositions in order to break down the scale of the boiler, but it seemed to him that they ought not to have the scale if they could do without it.

Mr. T. LAYINGTON FLETCHER, engineer to the Manchester Steam Users' Association, said he was inclined to recommend his society to lay down a pair of experimental engines. By this means the matter could be thoroughly investigated, and accurate results obtained. Present investigations were not of much value, because they were the result of engines working under very different circumstances, and only led to mistakes being made.

Mr. W. S. WOOD, Dukinfield, said that he appeared before the meeting as a cotton spinner specially, not as a practical engineer, and, therefore, what he had to state to them were real facts. The facts to which he referred were found in his pockets. The firm with which he was connected had two mills, in one of which triple engine were in use, and in the other they used quadruple engines, and it was found by practical results that the use of quadruple engines effected a great saving. In the Victoria mill, in which triple engines were used, during the last six months 57,300 spindles had been driven at an expenditure of 59 tons 1 cwt. of coal per week. At the Albert Mills, where quadruple engines were used, 48,240 spindles were driven by a consumption of 35 tons 12 cwt. of coal per week. The quadruple engines had been at work for 12 months, and not a single penny had been spent upon them. With the triple cylinders they had been working at 2½ lbs. per hour per horse-power; with the quadruple engines they were working at about 1½ lb. per hour that saved more than any other engine in the neighbourhood.

Mr. ADAMSON briefly replied, and consented to the adjournment of the discussion until the next meeting of the Institute in London.

The "Howard Boiler" formed the subject of a paper by Mr. DAVID JOY, of Barrow-in-Furness, read at the previous meeting, and the discussion of which was adjourned. Mr. JOY stated that the Howard boiler had been before the public in various forms since the year 1866, when the first one was made by Messrs. J. and J. Howard, of Bedford, for use in their own works. The object of the paper was to treat chiefly of the form in which it was now being manufactured by the Barrow Shipbuilding Company at their establishment in Barrow. The boiler consists of a number of tubes 12 ft. long by 9 in. diameter, and 5-16ths thick, and equal to a bursting pressure of 1500 lbs. per square inch. These tubes are joined at both ends by wrought T heads, coned and brought together within a curved wrought iron ring, the cones on the tubes forming tangents with the curves of the ring. The tubes are all held together by the vertical bolts passing down through the heads of the tubes. These bolts are quite clear of the hand hole, which is made in the head of each tube, and which serves for the examination and cleaning of each tube. The tubes thus bolted together form sections, and from the upper end of each upper a steam receiver, which collects the steam made in several of these sections. This receiver is provided with a stop valve and safety valve, and so forms, with the sections feeding it, an independent boiler. A number of sections are usually wrapped together, according to the size of the boiler required. It is found convenient in practice, when considerable power is required to range a number of such boilers side by side, working into one common steam receiver. Each boiler is capable of being stopped for examination and cleaning independently of the action of the others. And so, in a range of sections, one set should always be kept as spare, each set taking it in turn to stand as spare. In this manner examination and cleaning may be carried on regularly and systematically at the same time that the full efficiency of boiler power is maintained day and night, without intermission.

Mr. LEWIS OLIVER, of the Society of Engineers, criticised the general construction of the boiler, and condemned it in every particular, and also questioned the circulating power of the boiler.

Mr. T. LAYINGTON FLETCHER said that he responded with reluctance to the Chairman's invitation to address the meeting upon this subject. He had, unfortunately, received many reports of explosions of Howard boilers, and he thought he was bound to say that if they had regard to their own safety and their workpeople they must keep free of these boilers. They were very dangerous, and, as engineers, they ought to warn the public against being taken in by the advertisement of them as "the patent safety boiler." In one recent explosion—he did not remember at the moment where it took place—three, four, five, or six lives were lost, and the apology that was offered by the inventors was that they had set themselves to the great enterprise of determining how high-pressure steam should be taken in the natural way as to the construction of heat to water, and he, therefore, lead to constant "priming" or irregularity in the heating of water, which was the prolific source of danger and disaster. His opinion was decidedly against the "pulp" system of boilers, and in favour of the ordinary Lancashire type.

Mr. CRAMPTON recommended, as a general rule the simplest form of boiler was the best, and urged that where, in consequence of pressure for want of room or other special circumstances, complicated forms were required, the greatest care should be taken in handling the boiler. He did not want to use the strong language which Mr. Fletcher had applied to the Howard boiler, but what he did say was that he would not use it.

Mr. JOY, in reply, said that the inventor of a new appliance must expect severe criticisms at the hands of the representatives of vested interests, but he had not been prepared for the sweeping denunciations he had that day heard. The Howard boiler, like other important new inventions, had had to go through experiments and failures, but he contended that it had met with considerable success, and was approaching perfection. In conclusion, he said that the Messrs. Howard would endeavour to correct the faults which he pointed out in them.

"The Use of Caustic Lime in the Blast Furnace" was treated of in a paper by Mr. ISAAC LOWTHIAN BELL, M.P., who said that the conversion of limestone into caustic lime was effected by the burning of a certain quantity of cheap coal in a limekiln. It was reasonable to suppose that there might be a saving of the more expensive kind of fuel used in the blast-furnace itself by the previous calcination of limestone used in smelting iron. Accordingly, it has occasionally been the practice to use the flux in the form of caustic lime. Mr. Bell's object in the paper he read on this subject was to show that the saving in fuel in furnaces 45 ft. high was insignificant, the chief advantage being an increase of make from apparatus already overtaxed when running 200 to 210 tons per week. In the case of 80 ft. furnaces, of 15,000 cubic feet, running 350 tons, and therefore a much less proportionate quantity, there was no advantage either in fuel or in any other respect by a previous calcination of the limestone. Mr. Bell proceeded to show, upon chemical reasoning, to what this expected want of economy is due. His views he supported by quoting actual results obtained at the Clarence Works, and the probable action of the lime found naturally in the Cleveland ironstone was explained by experimental reasoning.

Mr. E. WILLIAMS (Middlesbrough) said the fact that the conclusions of the paper he had just read had been arrived at by such authorities as Mr. Bell might be taken as good evidence that they were accurate; and he had, therefore, carefully considered the paper, and found these conclusions perfectly sound. He (Mr. Williams) had himself been trying calcined limestone in various furnaces, as against raw limestone, and he had come to the conclusion that there was no advantage in calcining. It was nearly given up at the Cleveland Works. [One slight advantage, but one, perhaps, more in convenience than a money advantage, was that the burning of limestone broke it well up, and thus saved the workmen the troublesome process of breaking it on the floors at the back of the furnaces. He mentioned as an example of the adoption of practices which were much more economical in fancy than in fact that at the works with which he was connected he had for some time burned coke and mill ashes with the fine coal for calcining. He now, however, burned small coal by itself, and found that they saved 20 per cent. in the consumption of that coal when it was used alone. When they thought they were utilising the ashes they were taking 20 per cent. of coal to burn them up. He hoped Mr. Bell would continue his investigation into the subject of his paper.]

Mr. A. BROGDEN, M.P., had found that by the use of lime his furnaces produced a larger yield per week and more regular work. Perhaps his furnaces being but 45 ft. high might account for this result, but, speaking from his experience only, he would regard a return to the use of raw limestone as retrogression.

Mr. WHITWELL said the height of furnaces certainly seemed to affect this question, for the results obtained by calcining the lime were not similar in their high furnaces to those they obtained in their lower ones. The new furnaces were from 70 to 80 ft. in height, and their older ones 50 ft. In the older furnaces, with calcined limestone, they got greater regularity of work and a largely increased make of iron, with a proportionately reduced consumption of coal. In their new furnaces they thought they saw in the last three weeks not an increased yield or driving, but a slightly better and more regular quality of iron. He had little doubt, however, that in the long run they would find, as they always did find, that Mr. Bell's views were practically correct.

Mr. G. J. SHELUS urged that where calcined ironstone was used care should be taken to have it thoroughly calcined. It seemed to him that in a tall furnace such lime did not produce much effect.

Mr. R. LAYBOURN, of Tredegar, had found that his furnaces worked much more regularly with calcined limestone than with the raw stone. There had been no investigation at his works into this subject in the scientific manner of Mr. Bell, but in his experience it appeared that the calcined limestone seemed to have a favourable effect in regulating the make of the surface, and he believed there was some improvement in the quality of the iron. He could not say positively, however, whether this improvement was not due to other circumstances. The furnaces were 45 ft. in height, and during the last four years improvements had been made in their hot-blast arrangements. It was, therefore, difficult to say whether they did not owe the improvement in great part to these alterations.

Mr. HOSGOOD, of Merthyr Tydvil, had found the use of calcined limestone advantageous, both for quantity and quality of iron produced from a low furnace, but Mr. Crawshaw, of the same place, had tried it, and found the quality of the iron deteriorated when they used calcined stone.

The CHAIRMAN feared members would think the Welsh experience not very consistent. At Dowla, nearly 20 years ago, there was a movement in favour of using lime, and his predecessor (Mr. Evans) made a set of experiments in which he (the Chairman) took no part. However, he could remember that they were carefully and honestly made. The result was that the use of calcined limestone was declared to be of no advantage. Its use was, therefore, abandoned, and had not been resumed.

Mr. I. LOWTHIAN BELL, in reply, said that, notwithstanding the remark of the President, they were tolerably consistent in their views as to the use of limestone in its burnt or unburnt state. He admitted that in what he termed an imperfect furnace—i.e., a furnace not 80 ft. in height—there was certainly to be an advantage in the use of calcined limestone, because by its use they relieve the furnace, proportionally, of an amount of work thrown on it, as it were, upon shoulders entirely unable to bear the burden. But in a perfect furnace, which carried the economy of coke as far as the chemical nature of the operation would allow, it was clear that unless that chemical condition was materially altered they had nothing to gain by it. In his paper he had dealt with furnaces under perfect conditions, and Mr. Brogden having imperfect furnaces, he was not surprised that he derived such benefit from the calcined limestone. He and some other gentlemen who had spoken were using furnaces 45 ft. in height instead of 80 ft., and looking at economy of fuel as an abstract question, these gentlemen were simply wasting their

made a year by the use of such furnaces. The loss of heat in furnaces of low height was "something terrific." The reduction of fuel in the North of England by the use of the means of raising the furnaces had been astounding. In fact, he did not hesitate to say that the apparent economy of fuel effected by heightening furnaces was a mere comparison with that effected by the hot blast.

[To be continued.]

SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE INSTITUTE OF MINING ENGINEERS.

An ordinary general meeting of members was held, on Monday, at the Geological Museum, Dudley; Mr. John Hughes, the President, in the chair. Among the members were Mr. Thomas Latham, vice-president; Mr. Henry Johnson, Mr. Thomas Brettell, Mr. T. Parton, Mr. W. J. Davies, Mr. W. Spruce, Mr. J. M. Fellows, Mr. J. Field, Mr. J. Tomson, and Mr. Alexander Smith, C.E., secretary. The following gentlemen were then elected they having been duly nominated:—Mr. W. Blackwell Keen, mine surveyor, Cradley Heath; and Mr. Joseph Lawley, mechanical engineer, Netherton. Mr. C. J. Homer, of Chatterley Hall, Tunstall, was nominated as a member. The secretary reported that the Duke of Sutherland had written that he was afraid the accommodation at Dunrobin was too small to admit of the South Staffordshire Institute and North Staffordshire Institute in one year, but it had been arranged that 20 gentlemen from each Institute were to attend. It was shown that the Council had balloted for the choice, after it had been agreed that the president, secretary, and those of the Council who had applied in person, should go without being subject to election.

Mr. Thomas Parton, F.G.S., read a paper on "The Duties and Responsibilities of Managers under the Mines Inspection Act." He said the personality, duty, and responsibility of what the Act of Parliament relating to the regulation of mines termed "owners, agents, or managers," were matters of grave consideration for the profession. The stringent measure and new matter introduced into the Act were startling in the extreme, and, as Mr. Parton said, there was now the responsibility for a manager to prove his innocence instead of the prosecution proving his guilt. Mr. Parton then referred to the expressed opinions of the Mines Inspectors, Mr. Willis, Mr. Dickinson, and Mr. Alexander (Scotland), who point out that the present law as affecting managers is not working altogether satisfactorily. It was thought that really practical men would be deterred from work which they were eminently qualified to do because of the high standard of qualification required. Mr. Alexander, then, spoke of the advantage of second-class certificates to enable practical men to work small mines. Mr. Parton resuming, said the Act provided that every manager should be a practical miner, a chemist, or a practical mechanical engineer, and a philosopher, for the Act said that any contravention by any person should be visited on the owner, agent, and manager. Every mine manager, he felt, was anxious to do his duty, and, above all, to save life, but the crying out of the strict letter of the law would lead to much evil. This would not be felt so much in the North as in the South, where the mode of working was so different. Mr. Parton then cited a case where, under rule 16, the manager was bound to see the roof and all travelling roads secure. He may have given strict orders for timbering, and yet, after that had been done, a small piece of coal falling from between two faults and killing a loader rendered the manager liable to be fined. The manager ought, therefore, to possess the power of omnipresence. With a system like theirs, where the timber was being removed and shifted from evening until night, and from night until morning, how was it possible for a manager, with only one pit, to see and direct everything? The common-sense view of things was that each individual miner whose duty it was to set the timber should be held responsible for his own safety. As it was, all—even the aggr, or deputy, or the collier—were free from all responsibility, and so likely to become careless, whilst the manager had all the responsibility. In long wall working systematic timbering could be carried to a great extent, but there were cases, and always would be, where much should be left to the practical judgment of the men. The duties of managers should yet have the most careful consideration at the hands of the Government. It was not the spirit of the present law they complained of, because an Act was wanted to compel care; but the letter of the law was too often misapplied. The law as it at present stood professed to accomplish universal safety, but the requirements were in themselves valuable means to an end, but the mistake in application was self-evident. It treated the mining world like a physician who insisted on treating all his patients the same medicine. First, it was deemed advisable that the responsibility of collier, deputy, and manager should be more clearly defined; and, second, if the status of the working collier was to be proved there should be an issue of the second-class certificates for skilled workmen. He (Mr. Parton) would go further, and have certificates for (a) general manager, (b) manager, (c) deputy, and (d) special engineering department. Then the responsibility would be divided, as it was in the marine service of the country, where the captain and three or four officers had each separate functions and liabilities. A captain could not direct the ship night and day. There could a mines manager be present at every operation. Let him be as skilful as possible, it was not possible for him to use that in half-a-dozen places at once, or see everything which passed. Therefore, certified competent persons to carry out, and be responsible for orders, should be appointed.

Mr. W. Spruce said he agreed with nearly every word which Mr. Parton had said, for managers had to perform duties which were impossible. He moved a vote of thanks to the writer of the paper, which should be printed and circulated among the members. Seven members thought it would be better to have a paper as a whole than the remainder of the paper at the next meeting, or he would supply the secretary (Mr. Alexander Smith, C.E.) in time to have printed. Mr. Parton said the second paper on the subject would be a definition of the duties of managers and others connected with the management of pits.—Mr. Field asked whether it would not be wise to have left out all allusion to the case tried? It would not be judicious for the Institute to discuss any question which had been settled by magistrates. The Act of Parliament which they were very tightly, but it would seem even to the public were not trying to act up to the Act. What was wanted were questions for the amendment of the Act, and prevent oppression showing those at head-quarters that legislation did not act fairly. The President said the 12 Inspectors of Mines had taken up the matter, and it would be well for a strong Institute like theirs to be in elucidating the question.—Mr. Tomson seconded the vote of thanks to Mr. Parton, which was carried unanimously.—Mr. Parton said, and said that he only cited the case to show that the Act was not working rightly; not because he wished to discuss the matter at all. (Hear, hear.) It was fair to argue by analogy, and when the weaknesses of the Act were shown they should be used as arguments.

Mr. Thomas Bridgwater, of Kingswinford, exhibited a new signal for mining purposes. A vote of thanks was passed to the exhibitor.—The secretary said the following was the result of the election and ballot alluded to above:—Mr. John Hughes (president), Mr. Smith (secretary), Mr. Thos. Roper, Mr. W. J. Davies, Mr. Henry Johnson, Mr. J. M. Fellows, Mr. Thos. Parton, Mr. John Skidmore, Mr. W. Spruce, Mr. W. Blackmore, Mr. D. Rogers, Mr. Thos. Brettell, Mr. Fletcher, Mr. J. Dando, Mr. S. J. Bailey, Mr. Addenbrooke, Mr. Hughes, Mr. Nicholson, Mr. R. Mason, and Mr. S. Rowley. The secretary read an important letter from the secretary of the North Staffordshire Institute, in which a desire was expressed that the Institutes should be amalgamated, many members of the Wolverhampton body desiring to join the South Staffordshire and East Worcestershire Institute.—It was moved by Mr. Hughes, the president, and seconded by Mr. Henry Johnson, that a meeting of the Council of the Institute should be convened to receive the proposed amalgamation from the South Midland Institute.

WORKING AND LOADING COAL.—Mr. W. F. Firth, of Barley Wood, has patented some improvements in machinery for working and loading coal. His provisional specification describes an arrangement for giving a self-acting motion to coal-cutting machines in which the cutter receives a reciprocating

motion from an air engine. An arrangement is also described for working coal by drilling and afterwards pressing or forcing it down. An arrangement for loading coal is also described.

AUSTRALIAN AFFAIRS, AND PROGRESS.

The consumption of our railway iron this year in the Australian colonies and New Zealand has attained such importance that we need make no apology for referring to it in some detail. Our exports of railway material to the Antipodes presented some little weakness in July as compared with the corresponding month of 1874; nevertheless, they amounted to 4476 tons, as compared with 7133 tons in July, 1874, and 1716 tons in July, 1873. In the seven months ending July 31 this year the exports attained an aggregate of 46,491 tons, as compared with 45,221 tons in the corresponding period of 1875, and 11,009 tons in the corresponding period of 1873. The exports have thus been maintained this year, while as compared with those made two years since they show an augmentation of somewhere about 400 per cent. Under these circumstances, it is clearly interesting to trace in a few broad outlines a few current phases of Australian life and history. In New Zealand, a marked improvement is reported in the principal mining interests of that colony, and particularly in gold mining in the Thames field. The latest discovered gold field—the Tairua—is said to promise very rich returns; the result of the crushing of 2½ tons of stone from the top of the reef was a yield at the rate of 40 ozs. to the ton. At the last dates, several new companies had been formed to work fresh claims. Even Western Australia, long the most stagnant and unprogressive settlement on the Australian coast-line, seems to be bent on developing its mineral resources. Thus, the Western Australian Government has offered a reward of 5000l. for the discovery of a payable gold field within 300 miles of a declared port. This reward is attracting the attention of adventurous prospectors in neighbouring colonies, as it is known that quartz reefs traverse Western Australia from south to north, while samples of quartz sent to Melbourne and Sydney for testing exhibit favourable results, a proportion of upwards of 1 oz. to the ton having been obtained.

Lead and copper are said to exist in large quantities in Western Australia, particularly in the northern districts. In the Champion Bay district smelting works are in course of erection by companies; some of these companies have been formed by local gentlemen, while others have been originated by Victorian capitalists. It may be added that iron ore is found in Western Australia in almost inexhaustible quantities, although it is not of very first-rate quality. Queensland is not without importance as a gold-producing colony; in 1872 the Queenslanders turned out 178,308 ozs. of gold, valued at 592,993l. Coal is also worked in Queensland to a small extent; the production of 1872 amounted to 27,727 tons, valued at 16,120l. a *propos* of Auckland, New Zealand, are being every day brought into bolder and bolder relief. At Wangarei, for instance, a valuable seam has been found, which will shortly be opened out with a view to its being worked. Thus far we have spoken only of Australian mining progress. The difficulty is, of course, to know where to begin and where to stop, but we may add that we are compelled from sheer want of space to pass over altogether without notice the marvellous progress which has been achieved of late years by the wool-producing interest of Australia.

The general result of the growth of population and wealth in the Australias may be inferred from the single fact that the consolidated revenue of Victoria for the year ending June 30, 1874, amounted to the goodly sum of 4,415,724l.; and the expenditure of the year having been 4,245,233l., it follows that a surplus of 170,491l. was carried forward to the credit of 1874-5. No wonder, under these circumstances, that the Australians—and especially the Victorians, the New Zealanders, and the New South Welsh—have been undertaking a number of additional railway extensions of late. A recent official return shows that at the close of 1871 there were 329 miles of railway open in Victoria, the network having been constructed at a cost of 11,108,950l. The total value of the rolling stock employed upon these lines was then computed at 831,190l. In September, 1874, Victoria had 514 miles of line in operation, and by June, 1876, the total will, probably, be increased to 599 miles. What is taking place in Victoria in regard to railways is witnessed to some extent, also, in almost every other member of the Australian group. Hence the good demand at the Antipodes for our railway iron.

RAILWAY PROSPECTS.

One of the most remarkable features of this year of floods, failures, dividend collapses, and what not, has been the improvement which has been established in the prices current for the ordinary stocks of British home railways. There are now only three large companies—the Great Eastern, the Manchester, Sheffield, and Lincolnshire, and the London, Chatham, and Dover—whose ordinary stocks are the following companies were in this unfortunate position:—The Great Eastern, the London, Brighton, and South Coast, the London, Chatham, and Dover, the Manchester, Sheffield, and Lincolnshire, and the North British. The ordinary stocks of two other important companies—the Caledonian and London and South-Western—were under par, while four years since (that is at the close of August, 1871) they were barely above par in August, 1871; now they are at a respectable premium. Moreover, even as regards the Great Eastern, the London, Chatham, and Dover, and the Manchester, Sheffield, and Lincolnshire, the ordinary stocks of those companies have sensibly hardened since August, 1871, although they are still somewhat laggards. In August, 1871, Great Eastern stood at 43, while it closed last month at about 53; in August, 1871, London, Chatham, and Dover was quoted at 22, while it had crept up to nearly 26 at the close of last month; in August, 1871, Manchester, Sheffield, and Lincolnshire was quoted at 63, while in August, 1875, it acquired the relatively excellent price of 79. It may be interesting to enquire how it is that in a period of considerable difficulty in many branches of business railway property has thus been steadily growing in value.

We believe the causes of the improvement are readily ascertainable. In the first place, there is now an immense class of small railway investors, whose savings help from time to time to sustain railway stock quotations. Nothing is more convenient to the small capitalist than an investment in a railway company, which sends him his dividend through the post to his "last known place of abode" without putting him to any trouble whatever in the matter. Moreover, as a tolerably good interest accrues from railway ordinary stocks, upon an average, they have gradually grown in value. Thirty years since the large small capitalist class regarded railway investments with a certain apprehension, but now it ventures into them calmly and confidently. In the second place, railway property is better administered than it formerly was. The director interest has grown in stability and respectability. The great railway companies now elect as directors gentlemen who are substantially interested in the concerns of which they assume the management, and the benefit resulting from this is great and obvious. In the fourth place, railway property has gradually become more and more fused in a few general networks, and this has had the effect of reducing competition on the one hand, and expenses of management on the other hand. In the fifth place—and this is, perhaps, the most important consideration of all—the population and wealth of the country appear to have a constant tendency to expand, and the effect of this expansion is to pour more and more traffic upon systems which even four years since were tolerably crowded with business.

These are the causes which have led to the growing prosperity of British railways. That prosperity was checked for a time by the coal difficulty which prevailed two years since; but still it is so well established that, left to itself, British railway property has a gradual tendency to grow in value. We have gone into the matter in some detail, because the coal and iron trades are obviously interested in the prosperity of British railways. When our great railway companies do well they are likely to expend larger amounts on the renewal of permanent way, and the construction of sidings and duplicate lines, to say nothing of extensions, which do not appear to have been yet quite brought to a close. The great railway boards have undoubtedly helped the iron trade to tide over the season of depression and difficulty against which it has had to contend

for many weary months, and railway directors could not, of course, have done this if they had not had the support of favourable half-yearly balance-sheets, and satisfied half-yearly meetings. With a probability of a further growth of traffic it might be well for our large railway companies to lay three lines of rails upon all their main lines. The London and North-Western appears to be doing this, and has been a good customer for rails accordingly.

GAS IN LONDON.

There appears to be an impression that gas in London is about to be revolutionised. We do not intend it to be inferred that any different system of manufacture is about to be introduced, but what we do mean is that the Metropolitan Board of Works is showing a disposition to purchase the undertakings of the various metropolitan gas companies, and as it can raise capital at a very moderate rate of interest—its 3½ per cent. stock now standing a little above par—it will be enabled, if it obtains Parliamentary sanction to the designs attributed to it, to produce gas upon somewhat cheaper terms than those upon which it is now made by the gas companies. The gas companies of London conduct their business upon principles differing materially in one respect from those in vogue with other undertakings. Thus, the companies set out upon the hypothesis that they are, under any circumstances, to be assured 10 per cent. upon their stock or shares. Blow high, blow low, this 10 per cent. is to be forthcoming. The coal difficulty, which has now happily subsided to a great extent, was a sore trial for metropolitan gas managers; but they advanced their rates, and drew, to some extent, upon the large reserves which they had previously formed, so that the 10 per cent. was still forthcoming even when matters were at their worst. The question which now awaits a solution which the future alone can give is—"Will the companies continue to be protected by Parliament in the enjoyment of their magic 10 per cent., or will Parliament enable the public authorities of London to avail themselves of their high credit, pay off the gas companies in stock or cash, and manufacture gas for the gas-consuming public of the metropolis at a cheaper rate than that at which they can at present obtain it?"

In the present session of Parliament three bills were introduced by the Metropolitan Board of Works and the Corporation of London. The object of the first of these bills was to empower the Board and the Corporation to purchase the undertakings of the metropolitan gas companies. The object of the second bill was to empower these bodies to construct new works and to supply gas in competition with the companies. The aim of the third bill was to regulate the metropolitan gas companies. The two first bills were withdrawn at an early period of the session, but the third measure was read a second time in the House of Commons and referred to a Select Committee of that House. This latter bill proposed that if the present maximum price of 3s. 9d. per 1000 cubic feet were ever exceeded the prescribed dividends of the company charging such excess should be reduced by 5s. in respect of every penny per 1000 cubic feet charged above 3s. 9d., thus repealing the revision clauses which were granted to one company (the Imperial Gaslight and Coke) by its Act of 1869, as a protection against loss in the event of any great increase in the cost of coal or other expense of manufacture. A long enquiry took place before a Committee of the House of Commons, and the result was the sanctioning of most of the principal provisions of the bill. The committee, however, at the same time provided that if the companies should reduce the charge for their gas below 3s. 9d. per 1000 cubic feet they should be entitled to an increase of their prescribed dividends to the extent of 5s. in respect of every penny of such reduction as a counterbalance to the provision subjecting their dividends to a diminution in the event of an increase of price beyond 3s. 9d. On the part of the companies it is contended that the adoption of this novel principle of legislation would have the effect of converting all the investments in metropolitan gas undertakings, which have been made on the supposed security of previous Acts of Parliament, into speculative investments, depending on the rise and fall of the price of coal, a matter over which the companies can exercise no control. This may be all very well from a 10 per center's point of view, but we confess that we rather fail to see why Parliament should make the production of gas in London a close borough affair. There is no special reason why metropolitan gas companies should always have a fixed, invariable 10 per cent.

TREATMENT OF ORES.—Sir D. G. FITZGERALD, of Brixton, has patented some improvements in apparatus and processes for the treatment of auriferous and other ores, and metallic compounds. The invention relates to the treatment of ores or oxidisable substances in a converting vessel containing nitric acid, or this acid in admixture with other mineral acid. By means of a tube communicating with the external atmosphere air is forced or drawn through the mixture of the oxidisable substance and acid. Heat may if necessary be applied to the mixture contained in the converting vessel, which latter is connected with a receiver, in which any volatilised acid may be condensed. This receiver is by preference connected with the lower portion of the converting vessel in such a manner that the condensed acid may be allowed to flow back into the latter. The receiver is connected with three or more Woolf's bottles or other equivalent vessels, respectively containing substances by which the vapours such as nitrous acid, peroxide of nitrogen which have escaped condensation in the receiver may be absorbed.

THE NEW CARBONIC ACID MOTIVE POWER.—Dr. H. Beira, of Groningen, has lately written an exhaustive article on liquid carbonic acid as the successor of steam, in which he says:—"For many years I have, with the collaboration of my brother, who is director of the Netherlands soda manufactory at Amsterdam, considered the question. 'How to transmute heat into mechanical power more advantageously than it is done in our common steam and other engines?' It occurred to me to make an experiment to see what degree the tension of the carbonic acid given off by sodium bicarbonate would amount to when heated in a closed space. We were surprised and much gratified to find that when sodium carbonate in dry pulverulent state, in a water solution, is heated in a closed space, a part of the carbonic acid is given off and condensed in a non-heated portion of the space, so that, at a temperature of 3000 or 4000 C., liquid carbonic acid can be distilled out of this salt with a tension of from 50 to 60 atmospheres."

WELDING TUBES.—The object of the invention of Mr. H. K. FLAGLER is to prevent the round bar and ball used in welding tubes, pipes, and other tubular articles from turning during the welding operation, and also to improve the construction of the ball. The invention consists, firstly, in holding the bar from turning by constructing it square at its rear end, and passing it between two rollers having V shaped grooves; and, secondly, in a hollow welding ball formed at one end on the interior, with longitudinal flanges arranged to form a bearing on each side of a square-shaped shoulder on the front end of the bar.

ROTARY PUDDLING FURNACES.—The invention of Messrs. E. A. and J. A. JONES, of Middlesbrough, consists firstly in admitting water intermittently to the space between the casings of the furnace (when the furnace is composed of two casings), which are practically water-tight, by various modes or contrivances. Secondly, in effecting the egress of the water and air from the water space of the rotary furnace by means of pipes, channels, or ducts, one or more of which are coiled round the outside of the outer casing, and communicate at one end with the water space. Or, if preferred, they may be coiled in the water space, and pass through the outer casing; and, thirdly, in connecting the water pipes which are cast in the bodies of the rings, or fitted in after the rings are cast (which rings are attached to the ends of the rotary furnace) at their external ends outside the furnace, with the water space between the casings by means of branch pipes or connecting pipes.

FASTENING TYRES OF RAILWAY WHEELS.—The invention of Mr. B. HOLLAND, of Wednesbury, consists in dispensing with the ordinary piercings in the tyre and the fastening pins, and using in place thereof fastening parts constituting portions of the rim and tyre of the wheel. For this purpose equidistant projecting pieces of a hook or dove-tail form are made on the outer edge of the periphery of the rim, which pieces are engaged by a twisting motion with an angular groove or seat in the heated tyre, cut away partly or slots in the tyre permitting the passage of the projecting pieces into the groove or seat. By the contracting or shrinking of the heated tyre upon the projecting pieces of the rim, the tyre is fastened to the rim, the clinching or compressing of the metal of the tyre preventing the movement of the rim on the tyre. The inner edge of the tyre is fastened to the inner edge of the rim by a flange on the former taking into a groove in the latter.

STEAM-BOILERS.—According to the invention of Mr. JOHN SHAW, of Low Walker, a steam boiler is constructed of a pair of equal and separate parts or sections. Each section consists of a cylindrical or other shaped casing, in the lower part of which is a cylindrical fire-box extending through the section, above which are fire tubes extending through the section. The two sections are set back to back with an enclosed space between them, into which the flames from the fire grates of both sections issue and whence they pass into the fire tube above, issuing into an up-take in the front of each section which may lead into a chimney common to both sections. Both sections communicate with one and the same steam chamber at top by means of pipes provided with shut-off valves.

ASPHALTIC FABRIC FOR ROOFING.—The improved asphaltic fabric invented by Mr. CHARLES GAUDEFEY, jun., of Beaumont-le-Vieux, France, is composed of a web of animal hair or flock, steeped in a bath of gas tar, pressed into an up-take in the front of each section which then spread upon the ground and sprinkled with peat ashes, care being taken to make them enter the web, which is allowed to dry a little, is again steeped in a bath similar to the first, then again pressed, spread out to thoroughly dry in the air, and finally, before being rolled up it is sprinkled with fine river sand. In applying the fabric as a roofing the

boards usually placed upon the rafters are dispensed with, the rafters are placed about 1 foot apart, and the fabric is at once nailed thereon. The edges of the fabric are brought close together, and the joint is covered by laths, which are afterwards covered with a layer of vegetable tar, asphalt, and analogous matters may be substituted in lieu of the gas tar, and the peat ashes be replaced by vegetable or other ashes, earth, or an equivalent.

Meetings of Public Companies.

WHEAL UNY MINING COMPANY.

A general meeting of shareholders was held at the offices, Austin-friars, yesterday (Friday).—Mr. ROBERT McALLAN in the chair. Mr. HICKEY (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed. The accounts for 12 months ending July 17 showed a loss of 480l. The debit balance was 850l.

The report of the agent was read, as follows:—

Sept. 9.—The lode in the 160 end, west of engine-shaft, is disordered and poor, but we have a good shoot of tin in the 150, west of this place, which we shall doubtless intersect in the bottom level. The 160 east is worth 8l. per fathom. A lode in the back of this level is worth 10l. per fathom. The 150 end, east of Gooding's, has a kindly appearance, and yields stones of tin. The 150, west of Gooding's, is worth 12l. per fathom; we have not yet begun to stop the back of this level. The 140 end, east of King's, is worth 12l. per fathom. A lode in the back of this level is worth 10l. per fathom. The 130 east is worth 7l. per fm. Three stops in the back of this level are worth 7l., 10l., and 15l. per fathom respectively. The 120 end east is worth 7l. per fathom. Three stops in the back of this level are worth 8l., 8l., and 12l. per fathom. The lode in the 110 end east is worth 15l. per fathom. Two stops in the back of this level are worth 9l. per fathom each. The 100 end east is worth 10l. per fathom. Two stops in the back of this level are worth 20l. per fathom in the aggregate. We have cleared and secured the 80, west of incline shaft, and put down tramroad; we are now stopping the back of this level in a lode worth 8l. per fathom. The 40 end west is worth 6l. per fathom. A lode in the back of this level is worth 12l. per fathom. We are rising the back of the 150 to meet Hind's engine-shaft, which is sunk 3 fathoms below the 130; the ground above the 150 is exceedingly hard, but we are doing our utmost to make the communication between the 150 and the 130 as soon as possible. We have put in a good second-hand boiler to Hind's engine; we have now four good boilers attached to this engine, and good pipework made complete to the 130; we intend to set the engine to work before the wet season sets in. This extra boiler and the new pipework have increased the expenses, but every bill is charged up close. There has been a falling off in the quality of our tinstone during the past month or two, owing to some of our best stops failing, but the new stops recently set are opening out very promising, and the quality of the tinstone again improving. The mine, on the whole, is looking well, but we have had to incur heavy expenses at Hind's engine and shaft during times of great depression in the price of tin.—W. H. RICH, M. ROGERS, W. RICH, jun.

The CHAIRMAN pointed out that the loss upon the quarter would not have been so large had it not been for the extra cost in connection with the new pitwork and repairs to the boilers, and there had also been an additional outlay in sinking the new shaft. The price of tin has been the lowest realised for the last nine years, sales having been made during the quarter at not more than 45s. per ton, although the last sale realised 50s. 6s. per ton.

The accounts were passed and allowed. A call of 3s. per share was made.

A vote of thanks to the Chairman and committee closed the proceedings.

[For remainder of Meetings see to-day's Supplement.]

ECHOES FROM THE MINING MARKET.

Tin continues in fair demand, but no further official change has taken place in the Cornish standards. Shares are scarce, and quotations firm. The next Banca sale will take place on the 29th inst., when 22,900 slabs will be offered. The copper market has been rather less active, although copper shares have been well supported throughout the week, whilst lead remains unchanged. The iron trade looks slightly healthier, but orders we hear are still of a very limited character. The principal demand is in sheet and galvanised iron. Coal is in better request, but no advance has taken place in quotations.

From Cornwall news of interest continues scanty. Wheal Cunnings is to be prosecuted for one month longer. Three cross-cuts are being vigorously driven in hopes of a discovery of importance being made. At Wheal Unity Wood an improvement for copper has taken place. There is a good report from Pevor, and the mine is looking well. Since the last meeting the sales of tin ore and stuff have amounted to 765l. Blencowe Mine—an adventure little known to public fame—has been sold to a local firm for 172s. South Crofty has just sold by tender about 70 tons of arsenic, averaging 8s. per ton. The best parcel made 8s. 6d., and the lowest 7s. 9s. The name of the purchaser is Capt. Hosking, of Dolcoath, and has not yet been ascertained. Capt. Hosking, it is said, has recently appointed a toller to the extensive mineral estate of Mr. Basset, of Tisbury. We hear good news from South Condour. The mine is looking very well. The ground in the deep-adit, north of junction shaft, is easy for driving, and it is expected the lode is close at hand. The last sale of tin realised 99l. (19½ tons).

A lucky hit has been made by two miners and a boy at South Caradon. In two months' working a pitch at 13s. 6d. in 1l. they have netted nearly 400l. No wonder working on tribute is a fascinating employment to miners. The pitch is now reduced to 2s. in 1l. The mine has just given a dividend of 2l. per share (1024d.), and a credit balance of 2044l. has been carried forward. The feature of the report is the announcement that in the course of a few days West Caradon—the adjoining mine, and abandoned by its proprietors some little time since—will be worked in conjunction with South Caradon, whereby it is expected the returns of copper will be largely increased. The old mine will, of course, possess a great advantage over the former West Caradon Company from being able to work jointly and in a much more economical manner than if they were distinct concerns. During the past quarter South Caradon has sold copper ore to the tune of 10,438l., out of which a profit of 1515l. has been made. East Pool, it is said, has made a profit in two months of nearly 2000l. At Cathedral, Wheal Hope lode, one of the champion lodes of the district, has been discovered. Wheal Uny has lately sold 11½ tons of tin for 567l. Providence Mines have a debit balance of 475l. For the four months to July 30 the total debits have amounted to 2788l., and the credits to 2271l. A loss of 517l. was thus made, but a previous credit balance and a small item of 8l. for calls reduced the adverse balance to the sum named. The production of tin has fallen off during the four months.

In consequence of the representatives of the late Earl of Lauderdale declining to continue their interest in St. Ives Consols, it has been finally determined to wind up the adventure. The property will first be offered as a going concern, and if not sold the pitwork will at once be drawn to surface, and the plant and machinery dispersed. We continue to hear excellent accounts of West Chiverton. The mine is doing very well. Sales are on the increase, and costs on the decrease. This will be pleasant news for the shareholders.

The evils of the Cost-book System, when it is administered in opposition to its guiding spirit, have been strikingly shown by a recent circular issued by the purser of the Frank Mills Mine (Devon). Nearly two years ago—that is to say, in November, 1873—certain shares were forfeited for non-payment of calls. Nothing further was heard of the matter, we believe, until a few days ago, when each shareholder who had had shares forfeited received a printed paper containing what is called "an account," and demanding 1l. 0s. 6d. per share as his proportion of liability. In the so-called account—which, by-the-by, is undated, nor vouched for in any way, as no name or names of any kind appear upon it—the following are the items on debit side:—Balance to bankers, as per printed balance sheet, passed Sept. 9, 1873, 2288l.; dues, 218l. 13s. 9d.; coal and freight, 361l. 4s. 9d.; law charges in the absence of, to date, 239l. 10s. 2d.; coal and freight, 361l. 4s. 9d.; law charges in the absence of, with lease, 38l. 15s.; cost inspecting mine, 8l. 17s.; rent to Christmas, 1873, 19l. 1s. 5d.; making together, 7111l. 16s. 6d. On the credit side there appears:—Calls received to date, 1454l. 19s. 5d.; ore sold to date, 1191l. 17s. 6d.; and sundry materials sold, 114l. 2s. 8d., leaving a deficiency of 4350l. 16s. 10d. The scanty items charged "to date" would be more intelligible if any date appeared upon the document, but in the absence of this we have been asked by more than one perplexed shareholder who is, unfortunately, on the black list as a defaulter, whether he is to understand ever since his forfeiture, he has been debited with his share of the expenses of the mine, or whether the demand upon him simply represents his share at the time of forfeiture? The heavy items appear to us incomprehensible, and we doubt if by the laws of the Cost-book System such a serious one as that which appears as due to bankers could be recovered from any shareholder who did not sign the cost-book authorising the overdraft.

The Cost-book System is essentially a cash one, and we believe advances by bankers are not recognised by the Vice-Warden of the Stannaries. At any rate, the shareholders interested have a right to ask for more information than that which the meagre statement just issued gives them, and on their behalf we should like to be informed why nearly two years have been allowed to elapse before the share of liability was made out and notified; why in each case has a threat of legal proceedings, unless the demand of 1l. 0s. 6d. per share was promptly remitted, accompanied the purser's letter, and whether the particulars of such a heavy and exceptional demand should not have been set forth in the clearest manner? Until full and complete information is given the shareholders interested have a right to refuse to pay, and we trust they will do so.

JAMES H. CROFTS.

From Mr. ALFRED E. COOKE (76, Old Broad-street, London).—While prices in the Mining Market have been well maintained during the past week, business has been restricted and confined to narrow limits. In consequence of the absence of many operators during the holiday season. The market for all metals continues firm, and an increased amount of business may surely be looked for in the course of the next two or three weeks. Everyone will have again settled down to business, and it is but reasonable to assume that a fair share of the enormous amount of capital lying idle will be invested in mines, where in many instances a larger percentage may be safely relied upon than is returned by any other security. In these columns it has, no doubt, frequently been remarked that it is not only by choosing shares in a dividend-paying property that a good investment may be made, but by making an outlay in progressive mines, which often rapidly rise in value, and thus great profit is secured. A small capitalist, especially, has no other channel where he is likely in a very short time to double or treble his outlay. Even 20l. invested now in mining might any day realise 40l.; and where is there a security in which so small a sum can be laid out with such an opportunity of gain? Indeed, mining is the legitimate source of fortune.

The notice last week in the Journal of the Nascent Copper Process will probably revive the interest shown at its first introduction. The Bamfylde Company has entered into a contract whereby reduction works will at once be erected on the mine, and the ore treated under the Nascent Process. It is estimated that at present there are from 80,000 to 100,000 tons of stuff containing about 3 to 17 percent of silver and 1½ percent of copper, which, without the introduction of this process, would be entire waste. It will be interesting to notice the progress of this system. Under the direct supervision of Dr. Emmens (the inventor) and Dr. Fer-

kins the Bamfylde shareholders may feel assured that the contract will prove of immediate benefit to them.

It is calculated that the net profits of the company will admit of a dividend of 10 percent upon the capital. This may also be considered a bonus, for the mine itself is opening out well (as will be seen by the report), and an advance in the price of copper will be a further advantage. The shares are so low (about 20s. to 25s.) that they offer an excellent speculation. It may be stated that at these prices they are very scarce, so that no time should be lost in purchasing. In lead mines Pateley Bridge will probably, ere long command much attention. These shares should not be overlooked, as an advance is nearly a certainty. Space will not allow me to continue my remarks, but advice on any property may be obtained on application.

COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.

DISTRICT UNDER THE CHARGE OF THOMAS EVANS, Esq., H.M. INSPECTOR OF MINES.

PERSONS desirous of being EXAMINED in this District, for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, should at once communicate with the Secretary to the Board of the above-mentioned district, at the following address:—

By order of the Board,
WILLIAM SAUNDERS, Secretary,
Full-street, Derby.

N.B.—Persons who do not reside within the district are equally eligible for examination with those who do.

NOTICE.—ROYAL SCHOOL OF MINES, JERMYN STREET, LONDON.

THE TWENTY-FIFTH SESSION WILL BEGIN ON FRIDAY, the 1st OCTOBER. Prospectuses may be had on application.

TRENHAM REEKS, Registrar.

ROYAL COLLEGE OF SCIENCE FOR IRELAND, STEPHEN'S GREEN, DUBLIN.

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A Diploma of Associate of the College is granted at the end of the Three Years' Course.

There are Four Royal Scholarships of the value of £50 each yearly, with free education, including Laboratory instruction, tenable for two years. Two become vacant each year. They are given to students who have been a year in the College. The Fees are £2 for each Course, or £10 for all the Courses of each year, with the exception of Laboratory.

CHEMISTRY (THEORETICAL AND PRACTICAL), METALLURGY, &c.—Professor GALLOWAY, F.C.S.

MATHEMATICS, MECHANICS, AND MECHANISM.—Professor HENNESSY, F.R.S.

DRAWING, ENGINEERING, AND SURVEYING.—Professor PIGOT, C.E., M.R.I.A.

EXPERIMENTAL PHYSICS.—Professor BARRETT, F.R.S.E., F.C.S.

GEOLOGY.—Professor HULL, M.A., F.R.S.

MINING AND MINERALOGY.—Professor O'REILLY, C.E., M.R.I.A.

AGRICULTURE.—Professor DAVY, M.D., M.R.I.A.

BOTANY.—Professor M'NAB, M.D.

ZOOLOGY.—Professor LEITH ADAMS, M.B., F.R.S.

The Chemical and Physical Laboratories are open daily for Practical Instruction. The Session commences on Monday, October 4th.

Programmes may be obtained on application to the Secretary, Royal College of Science, Stephen's Green, Dublin.

FREDERICK J. SIDNEY, LL.D., Secretary.

ROYAL CORNWALL POLYTECHNIC SOCIETY.

THE FORTY-THIRD ANNUAL EXHIBITION WILL OPEN at the Polytechnic Hall, Falmouth, on TUESDAY, September 14th.—To Members, at Eleven A.M.; to the Public at noon.

The President (A. PENDARVES VIVIAN, Esq., M.P.) will deliver the Opening Address at One o'clock P.M.

The Exhibition will open on the following days at Ten A.M.

EDWARD KITTO, Secretary.

BRISTOL MINING SCHOOL.

The Governors of the Colston Trust intend at once to RE-ESTABLISH this SCHOOL in a thoroughly efficient manner.

The Course of Instruction will prepare Students to pass the Examinations for Government Certificates as Mine Managers, and the following are the subjects to be taught:—

MATHEMATICS AND THEORETICAL MECHANICS, by J. Welsh and W. F. Wood.

DESCRIPTIVE GEOMETRY, MACHINE DRAWING, BUILDING CONSTRUCTION, APPLIED MECHANICS, AND STEAM, by J. Munro, Associate of Royal College of Science, and late of Ayrshire Engine Works.

EXPERIMENTAL PHYSICS, by Ernest Cook, Associate of Royal College of Science.

CHEMISTRY AND METALLURGY, by T. Coomber, F.C.S., Head Master, late of Royal School of Mines and Royal College of Chemistry.

CHEMICAL ANALYSIS AND ASSAYING, by Herbert Munro, Associate of Royal College of Science, and Senior Chemical Scholar, London University.

GEOLOGY, MINERALOGY, SURVEYING, AND MINING, by Ralph Tate, F.G.S., late of Royal School of Mines.

One day per week is spent in the field or mine, and considerable time is devoted to the plotting of surveys.

The next Session commences on the 4th of October, 1875, and closes on the 24th of June, 1876.

Appropriate Courses of Instruction are also provided for those who are to be engaged in the Management of Manufacturing, Metallurgical, or Engineering Operations.

Students under Fifteen Years of Age are not admitted.

The Tuition Fee is £10 per Session. The Entrance Fees are 2s. 6d. for Registration, and 10s. on admission. These Fees are inclusive, excepting for the Three Laboratory Courses of Qualitative Analysis, Quantitative Analysis, and Assaying, the Fees for which are £5 per Course.

The Laboratory is also open daily to the public for INSTRUCTION IN CHEMICAL ANALYSIS AND ASSAYING. The Fee for this Instruction is £5 5s. per quarter, dating from entrance.

For further information regarding boarding houses, or any other matter, apply to the Registrar, Mr. WILLIAM BARGE, Merchants' Hall, Bristol, who will enter Pupils and receive Fees.

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THE COAL TRADE.

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coal into and from the port and district of London, by sea, railway, and canal, during August, 1875:—

IMPORTS.				
By sea.		By Railway and Canal.		
Ships.	Tons.		Tons c.	
Newcastle.....	159	115,888	London & North-Western.....	80,269 4
Seaham.....	28	12,948	Great Northern.....	82,627 0
Sunderland.....	91	64,497	Great Western.....	63,747 0
Huddersfield.....	1	670	Midland.....	120,664 0
Hartlepool.....	79	24,393	Great Eastern.....	49,643 2
Scotch.....	11	3,707	South-Western.....	489 0
Welsh.....	15	5,474	London, Clatham, & Dover.....	1,541 0
Yorkshire.....	27	4,963	South-Eastern.....	1,501 13
Small coal & cinders.....	16	2,913	Grand Junction Canal.....	362 15

Comparative Statement, 1874 and 1875.

By Sea.		By Railway and Canal.		
Ships.	Tons.	Ships.	Tons.	
Jan. 1 to Aug. 31, 1875	3744	2,064,464	Jan. 1 to Aug. 31, 1875	3,204,775
Jan. 1 to Aug. 31, 1874	3406	1,720,862	Jan. 1 to Aug. 31, 1874	2,978,234

Increase—present year 340 343,602 Increase in the present year 231,541

EXPORTS.

Railway-borne coal passing "in transitu" through district. Tons	66,839
Sea-borne coal exported to British possessions, or to foreign parts, for to the coast	39,699
Ditto, sent beyond limits by railway	7,450
Ditto, by canal and inland navigation	1,905= 48,814
Railway-borne coal exported to British possessions, or to foreign parts, or the coast	16,831
Ditto, by canal and inland navigation	1,573= 18,404
Sea-borne coal brought into port and exported in same ships	546
Total quantity of coal conveyed beyond limits of coal duty district during August, 1875	134,023
Ditto, August, 1874	142,283

Comparative Statement, 1874 and 1875.

Total distribution of coal from Jan. 1 to August 31, 1875	1,151,560
Total distribution of coal from Jan. 1 to August 31, 1874	1,384,181

Increase in the present year 67,670

General Statement, 1874 and 1875.

Increase in coals imported by sea during the present year 343,602

Increase in coals imported by railway 231,541= 575,143

Deduct increase in coals exported 67,670

Total increase in trade within London district during present year 507,463

MINING NOTABILIA

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

WEST CHIVERTON.—It will be seen by a short report from the manager of this mine, that the next sampling of mineral for four weeks will be equal to, if it does not exceed, the last, which realised 2000l.

RELISTIAN CONSOLS.—In the shaft referred to last week, to sink to the New Rosewarne copper lode, ore has been met with 3 ft. wide. The main operations of the company, however, will be to sink Duke's shaft to the junction of two lodes, one of which has produced very rich copper, and the other more than 3000l. worth of tin at the adit and 10 ft. levels. Duke's shaft is down 27 fms., and, in addition to all the necessary machinery, the company has 1700l. in hand.

FOREIGN MINES.

ST. JOHN DEL REY.—The directors have received the following telegram from Morro Velho, dated Rio de Janeiro, Sept. 5:—Produce, eleven days, second division, of August, 1875, 0s. 7255l. Yield, 102 oits. per ton. All going on well.

DON PEDRO.—Letter from mine captain, Aug. 9: The ore returned has again been derived from the Canoa and Nos. 6 and 8 shoots. We have extracted 11 boxes of work during the week from No. 8 shoot, below the 30, which is of a low standard.

We have also taken out 11 boxes of very low boxwork from Bryan's, on No. 8 shoot; the general work is of a low standard. The 35 cross cut is still in very soft ground, and the very slow progress has been made during the week, in consequence of the present end letting out so much water, and bringing away a quantity of sand with it. In the 35, driving north, on No. 8 shoot, the bottom part of it is in a very hard stone; we have been obliged to use dynamite on some occasions. The water being drawn from the mine amounts to 20-57 cubic feet per minute. Stopping has been continued without change. In our explorations nothing has been discovered to report.

RICHMOND CONSOLIDATED.—Cablegram from the mine at Eureka, Nevada: Richmond, 7th inst. 840,000. No. 2 furnace re-lit, and starts to-night.

INDEPENDENCE (Gold).—No change has taken place in the character of the work performed at the mine since last report. The latest mailed advice are to Aug. 14, when good progress had been made with the erection of the new mill, the battery timbers being raised, framed, and bolted, the floors and platforms were being built, and the plinon gear set.

CAPE COPPER.—Capt. Ton

of ore per metre. Our stipes and tribute pitches maintain their yield.—
Surface: During this month we have made good progress in making the excavations necessary for the tramway from St. Martin's to St. George's shaft, and in preparing the woodwork for the bridge across the Sioule. Our dressing operations have gone on regularly, and the samplings amounted to 295 tons.

PESTARENA UNITED.—Sept. 4: District Val Toppa: The ore discovered in the cross-cut west, above No. 1 level, is probably on the flat lode that we expected to meet with in this western ground. The lode in the end of cross cut has made a turn upwards, and this part is 2 ft. wide; I have no doubt of its being worth 1 or 12 dwts. of gold per ton, as before reported. On the side of this rich part there are many branches and strings of quartz and pyrites of less value. All the stuff that came from the driving of the cross-cut has been saved for milling.—Average ore: we have commenced now to open out on this discovery, south of cross-cut, where we have saving work for 4 ft. high or wide. After the winze in the intermediate level south, below Zero, on western part of great quartz lode, was communicated, we resumed driving the intermediate end south, by four men, at 75 f. per metre; the lode in this end is at present small, but will reach the run of 75 f. per metre; a new stop in south end of the above winze yields ore gone up from No. 1 level. A new stop in south end of the above winze yields 10 tons of ore per fathom, worth about 8 dwts. per ton, and is being worked by six men, at 27 f. per metre. The two stops on the lode, north and south of 1st cross-cut, in back of No. 2 level, are yielding 6 tons of ore per fathom, worth 8 dwts. per ton, and are being worked by eight men, at 22 f. and 23 f. per metre.—Great Quartz Lode: Stop in back and side of drive, above No. 2 level, in north end of ground, yields 10 tons of ore per fathom, worth 7 dwts. per ton; worked by four men, at 35 f. per metre.—New Lode: The two stops in bottom of No. 2 level, north of winze, yields 10 tons of ore per fathom, worth 10 dwts. per ton, and are being worked by eight men, at 40 f. and 35 f. per metre respectively. The stop in bottom of No. 2 level, north of 4th cross-cut, yield 7 tons of ore per fathom, worth 8 dwts. per ton; worked by four men, at 43 f. per metre. We have commenced a new rise in back of No. 2 level, north of 4th cross-cut, by two men, at 20 f. per metre of rise, which will turn out a quantity of ore for picking. The end south of 4th cross-cut, on flat branch, east of new lode, is suspended for the present, as is also the winze from No. 1 level, on western part of great quartz lode, and the men put on the stopes, but these places will be resumed as soon as men come in, which will probably be some time in October.

GEOLOGICAL SURVEY OF INDIA.

THE GOLD FIELDS OF SOUTH-EAST WYNAD.

The attention of the Madras Government having been again called, after a lapse of nearly 42 years, to the occurrence of gold in the Malabar district, it was considered advisable that an examination of the country should be made by the Geological Survey of India. As it turns out that the area over which the auriferous deposits and quartz reefs extend is so large that a considerable period of time must elapse before a full report on the whole district can be made, Mr. Wm. King, B.A., the deputy superintendent of the Survey, Madras, has prepared a preliminary note on the Gold Fields of South-East Wynad, and has favoured us with a copy, from which we are enabled to give a large amount of interesting information. The intermediate elevated terrace of mountain land lying between the low country of Malabar, the loftier plateau of the Nilgiri mountains, and the Mysore territory, called the Wynad, has been conveniently separated (principally by the coffee planters) into three divisions—North, South, and South-East Wynad—and these larger areas are again parcelled out after a native classification into amshams. South-East Wynad includes among others the Nambalicode, Moond, and Moophianad amshams, the latter being the most northerly of the three, and touching on South Wynad, or that in which the central village of Vithery is situated. Manantody, the principal town of the plateau, is in North Wynad. This mountain terrace has an elevation on an average of about 3000 ft., but out of it rise peaked ridges and hills of considerably greater heights, varying from 3500 to nearly 7000 ft. above the sea. A good deal of misconception appears to exist as to the healthiness of Wynad. As far as his own personal experience goes, the climate from the end of September to the middle of January is tolerably well adapted for Europeans, and he is informed by planters that it is even healthier from May to September, so that there are only three months in the year when the country is not healthy. Many planters leave during these months for the coast or the Nilgiris, but others are known to have remained with their wives and families for two or three years continuously.

The Malabar district has been famous for gold from time immemorial. Gold is still washed for in the low country and in Wynad, and it used to be got in old days from quartz leaders in the hill country around Dayvallah, Nelliolum, &c. Two tribes of people obtain the gold. The Pannirs wash for it in the alluvium, surface soil, and river sands. The Korumbars dug down to and excavated the quartz leaders. Tradition says that large finds of gold have been made at odd times by the Korumbars. The Pannirs rarely find more than four annas worth of gold in a day each man. The latter only now wash for gold in the off season when they cannot get work in the coffee gardens at five annas a day. In 1793 the gold mines of Malabar appear to have been noticed by the then Governor of Bombay, who tried to get information on the subject, and they were formed by the Madras Government in 1803. In 1831, on the report of Mr. W. Sheffield, principal collector of Malabar, Lieut. Woodly Nicholson was deputed to explore the country, with a view to the development. He visited the Nambalicode amsham, examined all the old workings of the Korumbars on the Chulaymullay, near Dayvallah, and obtained gold from the surface washings in the same neighbourhood. He also visited all the known gold localities in the low country of Malabar. He does not seem to have thought much of Dayvallah, and the gold obtained was not so pure as that from the plains. His acquaintance with the practical business of the matter, and his knowledge of the geological structure of the country, were very poor, but his perseverance at the work was marvellous. A committee was then appointed, consisting of Mr. F. Clementson, Major A. Ross, and Dr. F. W. Ward, who practically condemned the working for gold as an European industry in the low country of Malabar. Mr. King's own examination of the plains has as yet only been a cursory one, but, without going so far as this decision, he is inclined to agree to a great extent with it, more especially as it would appear from what is now known that there is sufficient evidence to show that European energy is more likely to meet with success in the Wynad.

About 10 years since Mr. Stern, of Australian experience, prospecting at Wynad, and made trial of the alluvial deposits, of which there are several in the form of flat swampy land along the courses of the streams. He tried near Dayvallah by sinking pits to bottom rock and always got gold, but not in sufficient quantity to make it worth while continuing his work. Within the last year or so attention was again called to the occurrence of gold in the Wynad. Some of the planters had lived in Australia previous to their coffee experience, and being more or less acquainted with quartz and its occasional associated minerals, they were naturally struck with the quartz in Wynad, while they also knew that gold was and is obtained by the natives. There was, however, a want of capital, and no one had seen gold in the quartz until Mr. Withers, the present manager of the Alpha Company, visited Wynad. Mr. Withers, who knows how to wash for gold, and is acquainted with quartz reefing, prospected the country until he was convinced that nothing was to be done at alluvial and surface washing. He then explored the old pits and workings of the Korumbars, and finally settled on a quartz reef—the Skull reef—in which he found visible gold. The Alpha Gold Company was then started, the prospectus of which states, on the authority of "the company's manager, and two of the directors, who have had much experience of quartz reef mining in Australia," that the stone will yield about 1 oz. of gold to the ton of quartz. The most common mode of gold in South-East Wynad is naturally in the recent deposits, such as the surface soil on the hill sides, the stream sands and gravels, or the true alluvial flats, but the quantity of gold found is in all cases small. The surface deposits are too small to justify hydraulic sluicing. The largest known fragment of gold found within the last few years in Wynad weighs over 7 dwts., but it contains some quartz; it is of pale colour, and is not much rolled; in fact, it has evidently not been washed far from the present reef, and has not been subjected to that exposure and attrition which seem necessary for the production of the finally purer metal usually obtained from alluvial washings.

A somewhat different mode of occurrence of the gold dust (not in pockets or at the bottom of lighter and permeable materials) and system of washing adopted (surface scrapings only being sifted) is observed in Wynad from what is known in Australia and California. In certain parts of Wynad, and more particularly around Sultan's battery, or in the neighbourhood of Manantody, the valleys are filled with extensive and thick alluvial deposits through which the streams, almost immediately after they leave the steeper hill

sides, often pursue a long and devious course, or become lost for a time in deep and dangerous swamps. No doubt gold exists in these deposits, but there is not sufficient to pay for washing. The next source of Wynad gold is the matrix or the quartz veins, and to a slight extent the rock traversed by these, and here the Korumbars have worked the smaller and more easily broken up veins often to a depth of 60 or 70 ft. The western slopes of many of the hills in the three amshams, already mentioned, are burrowed like rabbit warrens with pits. Extensive sluicing operations appear to have been carried on. According to every information that is to be obtained the whole of Wynad appears to be traversed by quartz reefs, but at present it is only known certainly that they are very strong and numerous in South-East Wynad. In the Nambalicode amsham there are at least 18 reefs, nine of which are auriferous; and the immediate neighbourhood of all has been worked by the Korumbars or washed by the Pannirs for gold. Most of these 18 reefs are traceable northwards into the Moond amsham. Still further westward by Pandalur, Cheyumbadi, and Cholady to Vellaramulla there are at least 24 more reefs, those in the neighbourhood of Pandalur having had their footwalls and leaders very extensively worked in old times by the Korumbars. Those of Cheyumbadi and Cholady have not been sufficiently examined, but it may be stated that one of the richest gold washing regions (Kathaparay) of the low country could only have been supplied with its gold from the Cholady and Vellaramulla drainage basins.

The quality of the alluvial gold appears to be very good; two samples from auriferous surface soil near Dayvallah assayed by Mr. Tween, of the Indian Survey, giving 22½ carats and 21½ carats of fineness respectively. The native gold is very much lower, that from the Skull reef giving only 15½ carats; Monarch reef 19½ carats, and a mixed sample 20½ carats. The mixed sample was from amalgamated ore taken from six reefs, and may be taken as an average for Wynad gold as far as it has been yet tried. It is probable that the fineness will vary as in other auriferous countries. As is usual in most gold regions the precious metal occurs here in the reefs or large lodes, in the leaders and spurs, and in the casing or mondescript rock, lining or casing these. The ore in the leaders and casing is mostly visible gold, that of the reefs usually fine. All the reefs are badly defined at the outcrop, and the dip is always to the eastward, generally at an angle of 25° to 30°. The reefs vary very much in thickness both in length and depth. The country rock in Wynad is gneiss, and is of a very variable constitution. There are hardly any intrusive rock in South-East Wynad.

Mr. King's observations so far appear to show that quartz crushing should be a success in the Nambalicode amsham at any rate, and he considers that with machinery and modern appliances the reefs should pay even if only 3 dwts. of gold are got always from the ton of quartz. The average proportion of gold for 15 trials on different reefs is at the rate of 7 dwts. per ton, and it is almost certain that many of these would have given a better out-turn could more perfect crushing apparatus have been used at the time. It seems that 7 dwts. to the ton will give about Rs. 4.28 (8s.) profit per ton crushed, even estimating the Australian rates for labour. The country, Mr. King continues, must now be tried cautiously, while better or worse results may in the meanwhile be obtained from experiments which are being carried out even before the arrival of the machinery of the pioneer company now waiting to venture in the field. There is no promise like that of the Australian or American gold fields; no great nuggets have been found; the washings have always been poor, through there is a small supply of gold swept down the hill side every year from the wear and tear of the quartz ledges, and the areas over which they can be applied are very small; and the gold which has been seen in the reefs is only in minute strings and grains. The ground can only be worked out by capital, the most perfect machinery, and skilled hands to guide the cheaper labour of the country in getting out the stone in the safest and readiest manner. And, naturally, where the percentage of gold in the quartz is as yet so small everything will depend upon getting out a sufficient tonnage of stone in a given time. Hitherto the land in Wynad has been principally parcelled out in coffee gardens, either freehold or paying an annual rent to the rajahs, who hold a great quantity of ground, or direct to the Government. At the same time, after a certain period, a revenue is derived from all the gardens by the Government, whether it be rajahs' land or not. The rajahs, of course, retain their right to all minerals, and can sell these as they like. The Government of Madras has not yet, Mr. King believes, decided as to how they are to act in the matter, except that applications for land for gold mining and for agricultural purposes on which quartz reefs are supposed to exist are being reserved for consideration until the question of mining interests is settled.

THE MOTALA IRONWORKS, SWEDEN.

These well-known Swedish ironworks, for the produce of which Messrs. Lander and Larsson, of Newhall-street, Birmingham, are the authorised agents in this country, are situated on the Götha Canal, about 25 Swedish or 165 English miles from Stockholm; they have now been established about half-a-century, having been erected in the year 1822 by an Englishman, Mr. Fraser, principally for the service of the Götha Canal; and they have now attained the first rank of importance, not only in connection with that canal, but also for the whole of the iron trade of Sweden.

The works are erected on an island, so to say, between Lakes Boren and Vettern, on the east and west respectively, formed by the Götha Canal on the north, and the Motala river and falls on the south. The distance between the lakes is very little short of four English miles, being 6400 yards, and the site is considered as one of the most picturesque in the country. In the vicinity of the works are situated the locks of Borenholm, by means whereof the canal falls as much as 50 ft. towards the lake. About two miles off is the village and station of Motala, the village having a population of about 1600 inhabitants, with various industrial works lying between it and the canal, such as the Motala Stoneworks, where a kind of artificial sandstone is manufactured, the Motala Paper Mills, the Motala Matchworks, a nail manufactory, and other establishments of minor importance. The station of Motala is on the main line of railway leading to the Vettern Lake district, and there are a little further on the line two very fine bridges, about 1300 ft. in length. A branch line connects the Motala station and the village with the ironworks.

These ironworks are in the hands of a large company of about 600 shares, the largest shareholders being His Excellency Count Platen, Lady Friensendorff, Sir—Manderstrom, Messrs. Robert Axel and Oscar Dickson. The buildings comprise large factories, fitting and erecting shops, forges and hammer works, rolling mills, foundries, pattern shops, and model house, with dry docks, &c.; and the machinery is mainly worked by hydraulic power, the water supply being unlimited, with a good fall, and derived from the Götha Canal, which at this point is 39 ft. above the level of the River Motala. Under the management of the former skilled engineer, Capt. Carlsson, the Motala Ironworks obtained considerable repute both at home and in foreign countries. The present managing director is Capt. E. Unge, and the company are also the proprietors of the Nykoping Ironworks and the Lindholms Works at Gothenburg, where the steamers are mostly built for the coasting trade of Sweden. The manufacture all kinds of heavy ironwork, castings, forgings, mill gear, also plates, rails, Bessemer steel, and marine steam-engines. We understand that all the monitors, turret ships, and ironclads of the Swedish Navy, besides several others for foreign Governments, have been built and engined at this company's works at Norrköping.

The gross annual value of the finished products of these works was in 1870 about 2½ millions of riksdalers, Rmt. (say, 140,000£.), and the number of workmen employed is about 2000. Over and above the works and machinery in the ironworks and docks, a special object of interest and study is to be found in the industrial dwellings, schools, hospitals, &c., for the workmen, which have an important social and industrial bearing and effect.

The following are particulars of the results of experimental tests made by Mr. David Kirkaldy, to determine the mechanical properties of bars and plates of soft steel and iron from Motala. In each case two bars of six different qualities, in length 10 in., and having a sectional area of one square inch, were tested under tensile and

compressive strains, with the following maximum and minimum mean results:—

	In Tension.	
	Maximum.	Minimum.
Elastic stress, per square inch	32,350 lbs.	24,350 lbs.
Ultimate stress, per square inch	65,412 lbs.	46,024 lbs.
Ratio of elastic to ultimate	56.2 per cent.	48.7 per cent.
Contraction of area at fracture	8.59 "	49.1 "
Extension, 40,000 lbs. p. square in.	8.59 "	2.19 "
Ratio of elastic to ultimate	81.9 "	29.0 "
Depression, 35,000 lbs. p. square in.	—	—
ditto ultimate	—	—
	In Compression.	
	Maximum.	Minimum.
Elastic stress, per square inch	35,050 lbs.	25,060 lbs.
Ultimate stress, per square inch	49,225 lbs.	35,605 lbs.
Ratio of elastic to ultimate	74.5 per cent.	65.8 per cent.
Contraction of area at fracture	—	—
Extension, 40,000 lbs. p. square in.	—	—
Ratio of elastic to ultimate	—	—
Depression, 35,000 lbs. p. square in.	2.74 per cent.	0.21 per cent.

It may be stated further that short pieces, 2 in. in length, 1 square inch in section, sustained without fracture a compressive strain of 150,000 lbs., or nearly 70 tons, the depression being only 36.2 per cent.; also the shearing stress was—maximum, 47,588 lbs.; minimum, 35,518, being to the pulling stress in the respective ratios of 71.6 and 77.2, but in one special case the shearing attained to the proportion of 86.1 per cent. of the pulling stress.

With samples of inch plates, dimensions 10 by 1.30 in., the maximum elastic stress per square inch was—lengthways, 33,800 lbs.; crossways, 33,850 lbs.; ultimate stress lengthways, 65,204 lbs.; crossways, 66,303 lbs. When subjected to bulging stress, over an aperture 10 in. in diameter, a plate 12 in. in diameter, ½ in. of an inch thick, sustained a stress of 145,865 lbs. without cracking, and similarly required a mean punching stress of 79,566 lbs., to punch a hole in it 1.28 in. in diameter, or of 1 square inch area.

—Iron and Coal Trades Review.

COAL IN AMERICA.

Recent surveys and explorations near the Pacific Coast, in Washington Territory, give some important facts in regard to coal for the Pacific States. These explorations—albeit under the direction of the Northern Pacific Railroad—are regarded with confidence on account of the character of the surveyor, Mr. Philip G. Eastwick, an engineer professionally familiar with the coal field, both anthracite and bituminous of Pennsylvania. He was sent out by the Northern Pacific Railroad Company late in the year 1874, but the winter interrupted his field operations, which were resumed early this spring; and the report referred to above is his first official statement of the results of his survey. His report covers the Puyallup Valley, about 25 miles from the town of Tacoma, which is the terminal city of the Pacific Coast, and ultimately the manufacturing interests of that region. Its tributaries consist of the Little White River, South Prairie Creek, and Flett's Creek. This is in latitude 47°. Mr. Eastwick's report specifies the locality, size, thickness, and dip of at least a score of the outcroppings discovered and examined by him during the past few months. They vary in thickness from a few inches to 20 ft., the average of those reported being nearly 8 ft. The dips range from 40° to vertical, the average being about 60°, "generally in directions either to the east or to the west, while the strata cross the country from north to south."

From these data it is held to be probable that this Puyallup region is either the eastern outcropping of a large basin lying on the west, or else an intermediate "principal anti-clinal axis" lying between two sub-basins. In either case it seems likely that coal in large quantities underlies the greater part of the Puget Sound Valley, of which the greater part of the soil is the drift formation. One theory—which is merely theory—is that these outcroppings lead to immense coal fields extending far under the Pacific. As to extent, Mr. Eastwick estimates that, while the area in miles cannot be approximated without very much more extensive and close surveys, the quantity available is enough to revolutionise first the coal trade of the Pacific Coast, and ultimately the manufacturing interests of that region. His first estimates, last fall, were that with two openings—one at the short line and one by a slope on the bed to a depth of 100 yards below the surface—a yield of 480 tons daily could readily be had. Now, after these spring explorations, he thinks that an amount of coal far in excess of the probable demands of the Pacific Coast can be obtained at once, without resorting to deep mining at all. As to quality, the coal discovered varies in character from lignite or brown coal, found near the western boundary of this coal region near the ocean, to the pure anthracite that abounds in the detritus of South Prairie river. Between these extremes there are grades of all qualities of bituminous coal, the most common being the long and short measures of water, which must be reached by bridged roadways, renders the difficulty more insurmountable. Besides, some time in the distant future, possibly in a few years, the Pacific end of the Northern Pacific Railroad may begin to be useful in that way, passing as it does through portions of this coal region. And, whatever may be realised from that road, the presence of the valuable mineral will soon command or create routes and means of transportation.

The demand for coal in San Francisco alone is about 1500 tons a day, and this quantity is steadily increasing. Beginning with 1872, and ending with 1874, the importations of coal into that city were as follow:—434,467 tons, 454,582 tons, and 531,947 tons. The price is about \$11 a ton, which shows ample room for competition or increase of quantity. The importations for 1874 were made up of 227,952 tons from foreign countries—mainly Australia, England, and Vancouver Island; 27,152 tons of anthracite from Pennsylvania; and 246,494 tons from the Pacific Coast—all of which is bituminous, of the poorest quality. Anthracite is obtained only in Pennsylvania, although some stony varieties, mined in Rhode Island and in Virginia, are classified as anthracite. The presence of fine anthracite in this Puyallup "find" is hence of great importance. Mr. Eastwick pronounces the coals, both bituminous and anthracite, that have been here discovered to be better than those heretofore used on the Coast—the former better than the native, and the latter better than the imported or the Pennsylvania varieties. The means of transportation are somewhat deficient, but the nearness of water, which must be reached by bridged roadways, renders the difficulty more insurmountable. Besides, some time in the distant future, possibly in a few years, the Pacific end of the Northern Pacific Railroad may begin to be useful in that way, passing as it does through portions of this coal region. And, whatever may be realised from that road, the presence of the valuable mineral will soon command or create routes and means of transportation.

The coal mining of the United States, according to the last—the ninth—census, had in it a capital of \$110,008,029; the annual yield being 32,863,690 tons, worth \$73,524,992. The capital is divided into \$15,016,785 in anthracite, and \$58,991,244 in bituminous. The ton yield is 15,664,275 of anthracite, and 17,199,415 of bituminous; and the value of these amounts respectively to \$38,466,745, and \$35,029,247. The coal measures of the entire country number seven.—1. The New England basin in Massachusetts and Rhode Island, covering 750 square miles, there being eleven beds, the maximum thickness 23 ft. The coal is plumbaginous anthracite.—2. The anthracite basins of Pennsylvania, the most important in the United States, covering 434 square miles, the average amount of coal beds being about 70 ft., the maximum being 207 ft.—3. The Appalachian field, covering an area of 63,475 square miles, extending from Pennsylvania to Alabama, 700 or 800 miles in length. It lies in eight States—in Pennsylvania there being 12,222 square miles, averaging 40 ft. of coal in thickness, the measures ranging from 825 to 2535 ft. in thickness; in Maryland, 550 square miles, about 5 ft. of coal in thickness; in the Virginias, 16,000 square miles, averaging 51 ft. of coal; in Ohio, some 10,000 square miles, averaging 40 feet of coal; in Eastern Kentucky, about 10,000 square miles; in Tennessee, 5100 square miles, averaging, probably, 7 feet of coal; in Georgia, 170 square miles; and in Alabama there are about 9000 square miles.—4. The Michigan basin, between Lakes Michigan and Erie, covering 6700 square miles, the maximum thickness of coal being 11 ft.—5. The Illinois basin, covering 41,700 square miles. It lies in three States—in Illinois 41,500 square miles, average thickness of coal being 35 ft.; in Indiana, covering 6500 square miles, 31 ft. of coal; and in Western Kentucky, 3700 square miles.—6. The Missouri basin, the largest on the continent, and probably the largest in the world, the area being something like 104,600 square miles—larger than the four middle States, New York, Pennsylvania, New Jersey, and Delaware, taken together. It lies in seven State divisions—in Iowa, about 25,000 square miles, about 8 ft. of coal; in Missouri, 27,000 square miles, less than 6 ft. thick; in Kansas, 17,000, same in thickness as in Missouri; in Arkansas, 12,000 square miles, probably 4 or 5 ft. thick; in Indian Territory, 13,500 square miles; in Texas, 6000 square miles; and in Arizona, perhaps 4000 square miles.—7. The Pacific measures, spoken of above, where Mr. Eastwick has been surveying.

Thus, it appears, without counting the latest discoveries, which are not yet defined, and without counting arrears of coal in the triassic or cretaceous formations and in the tertiary, where there are lignites, we have marked out by somewhat definite surveys an area of 228,959 square miles of coal measures. These measures range from 3000 ft. in thickness, with 70 ft. of coal in the anthracite basins in Pennsylvania to a few feet in thickness, and a few inches of coal in the Michigan basin. The aggregate area is greater than that of the New German Empire (225,000 square miles), which supports a population of over 40,000,000.

NEW CONCENTRATOR.—In the machine invented by Mr. W. B. Frazer there is an endless india rubber belt with raised sides, to which a quick lateral motion is given by an incline of from 6 in. to 12 in. The ore is fed on the belt with water by a spreader near the upper end. The tailings or lighter portions pass down the belt, and are carried off at the lower end, through the box, as shown. The quick lateral motion keeps the ore on the belt agitated, so as to allow the mineral or heavy parts of the ore to settle through the pulp to the surface of the belt, where it is carried up the incline over the head of the machine and into a tank of water through which the belt travels, depositing the concentrated material. The belt is 40 in. wide, and 27 ft. 8 in. in entire length. The capacity of each machine is from 7 to 8 tons a day, and one-half horse power is required to operate it. It needs but little water, and one man can attend to six or seven machines.

HOLLOWAY'S PILLS AND OINTMENT.—Sick headache and various nervous disorders are remarkably likely to occur at this season of the year, for scarcely any function of the human body escapes some inconvenience when fervent heat during the day is succeeded by chilly evenings. The liver, the brain, and the skin are the organs most susceptible of being affected, and if either the one or the other be so, the others almost invariably sympathise and show evidence of their sympathy; hence it is that sick headaches, biliousness, pimples, blotches, &c., are so frequent during the late summer months. The ointment should be rubbed powerfully into the region of the liver, and the pills simultaneously taken internally, will soon rectify the existing mischief.

Registration of New Companies.

The following joint-stock companies have been duly registered:—
NINE CHURCHES IRON COMPANY (Limited).—Capital 30,000*l.*, in 5*l.* shares. To carry into effect an agreement made between Wordsworth Harrison, of the Lund, Ulverstone, J. H. Pedder and William Pedder, of London, and S. Saurey, of Ulverstone, of the one part, and C. Row, of Ulverstone, for the acquisition of mines at Nine Churches and Lower Heyford, Northamptonshire. The purchase-money is to be 15,000*l.*. The subscribers (who are to take 1 share each) are—Richard Duke, Cloughton, Birkenhead, solicitor; G. Bargate, Barrow, ironmaster; C. F. Pearson, Colburn Park, Newton-le-Willows, mining engineer; J. W. Crossley, Dalton in Furness, ironmaster; W. Harrison, Ulverstone; A. B. Salmon, Ulverstone; and J. S. Saurey, Fell Side, Pennington. Messrs. W. Crossley, Richard Duke, and F. Pearson, will be directors so long as they like to retain office.
ST. WINIFRED LEAD MINING COMPANY (Limited).—Capital 20,000*l.*, in 1*l.* shares. To carry on lead mining operations, but no locality is given. The subscribers are—J. Caulfield, Leamington place, Old Trafford, wine merchant, 50; J. Gill, Church-street, Manchester, woolen and cotton merchant, 50; F. Olive, Castle Dale, Westmeath, distiller, 100; W. Olive, 5, Bedford-terrace, Bedford; W. J. Sutcliffe, 50, Upper Brook-street, Manchester, accountant, 20; Robt. Weaver, Higher Boughton, Manchester, engineer, 5; and Robt. Plumb, Oakfield House, Birkenhead, 5. This company is registered without articles.
OWMBYR MINING COMPANY (Limited).—Capital 25,000*l.*, in 10*l.* shares. To purchase the Ombry Mines, in the parish of Machynlleth and Penegoes, Montgomery, according to the terms of an agreement made between James Vaughan, Wm. Spooner, R. W. Hand, and the Hon. H. B. Johnstone and Matthew Follitt Blackstone, of Stafford. The property has hitherto been worked upon the cost-book system, but its purchase has been now effected for 12,500*l.*. The subscribers, who take one share each, are H. B. Johnstone, 8, Seamen's-place, Mayfair; Col. James Vaughan, 40, Gloucester-terrace, Hyde Park-square; H. E. Murray, Anderson, Taunton, esquire; W. Spooner, Walton Lodge, Stafford; C. F. Hand, the Green Hall, Stafford, esquire; and Thos. Wynne, Inspector of Mines, Stafford.
BRITISH CELLULOSE COMPANY (Limited).—Capital 80,000*l.*, in 10*l.* shares. To purchase the British patents and rights granted to Messrs. Wyatt, of Newark, New Jersey, relating to the manufacture of cellulose. The subscribers, who take one share each, are—H. H. Grenfell, Anglesey, Hants; L. P. Merriman, 96, Lead-church-street; C. Maudslayi, 1, Craven-street; F. J. Rickard, 155, Cannon-street; D. Carter, Clifton Villas, Croydon; J. A. Chapman, 9, Strand; and J. Carter, Craven-street.
CRYSTAL PALACE HOTEL COMPANY (Limited).—Capital 25,000*l.*, in 500*l.* shares. This appears to be a re-construction of the Masters Royal Crystal Palace Hotel Company (Limited). The subscribers are—F. J. Holland, The Hermitage, Upper Norwood, 2; T. J. Jones, Upper Norwood; John Smith, Brandon Villa, Upper Norwood, 3; J. B. Yonge, Terbourne House, Winchester, 1; W. M. Simons, Sydenham Hill, 2; Ogilvie, Craven, Upper Norwood; and M. J. Nicolson, 18, St. Andrew's-road, Upper Norwood, 2.
MEDICINAL SOAP COMPANY (Limited).—Capital 25,000*l.*, in 10*l.* shares. To manufacture soap.
OLIVE MOUNT MILL COMPANY (Limited).—Capital 25,000*l.*, in 5*l.* shares. To acquire the Olive Mount Mill, Whittlefield, Burnley. The subscribers (all of Burnley, who take one share each) are—J. Stanfield, H. Barlow, J. Baron, J. Walsley, H. Wignale, C. Farrer, and R. Holden.
OLDENBURG FUEL COMPANY (Limited).—Capital 12,000*l.*, in 10*l.* shares. To acquire the coal tract in the Grand Duchy of Oldenburg.
FAIRFORTH LAND, BUILDING, AND INVESTMENT COMPANY (Limited).—Capital 40,000*l.*, in 100*l.* shares. The subscribers to this company are—William Hutton, Bath-street, Oldham, 10; Joseph Lee, Oldham, 10; J. Taylor, Fairfouth, 10; J. Greenhalf, Oldham, 10; J. Bottomley, Oldham, 10; W. H. Hirschaw, Hollinwood, 10; W. Nuttall, Oldham.
EXPORT AND DISTRICT BRICK AND COAL COMPANY (Limited).—Capital 20,000*l.*, in 10*l.* shares. To purchase brick and tile works, and to establish an export and district coal trade. The subscribers are—Joseph Beeton, Southfields, Leicester, 30; J. Kingston, Peterborough, 30; W. Marsh, Peterborough, 30; W. Watson, Lynn, 15; E. Greenwood, Leicester, 20; J. Roberts, 22, Old Market, Wisbeach, 1; J. Crease, Peterborough, 1.
FORMBY LAND AND BUILDING COMPANY (Limited).—Capital 50,000*l.*, in 5*l.* shares. To acquire land at Formby. The subscribers are—R. Bentinck, Southport, 100; E. Iddon, Southport, 50; P. Bell, Royal Exchange, Manchester, 100; J. Parker, Southport, 50; J. Witham, Lord street, Southport, 50; A. Lard, Southport, 50.
BARRY AND CONTINENTAL STEAM SHIP COMPANY (Limited).—Capital 100,000*l.*, in 10*l.* shares. To carry on business as shipowners, &c. The subscribers are—Richard Clay, Rosebank, Hampton Court, 1; H. Whiteside, Rawlinson street, Barrow, 15; W. Gledhill, Rose House, Barrow; H. Stuart, West Mount, Barrow, 1; J. Waddington, Barrow, 1; B. Longbottom, Mossfield House, Barrow, 1; T. Stuart, Barrow, 1.
SOUTHPORT ARTIZANS' AND LABOURERS' DWELLINGS COMPANY (Limited).—Capital, 60,000*l.*, in 5*l.* shares. This company's title explains its object. The subscribers are—Walter Smith, Southport, 100; J. Bradbury, Southport, 200; W. Halliwell, Southport, 1; Peter Wood, Southport, 50; S. Southroyd, Southport, 50; T. Fisher, Southport, 50; T. P. Griffiths, Southport, 50.
SOUTHSEA BEACH MANSION AND HOTEL COMPANY (Limited).—Capital 20,000*l.*, in 10*l.* shares. To acquire the Beach Mansion Hotel, Southsea. The subscribers (who take one share each) are—R. E. Davies, Cosham House, Cosham, Hants; R. Pincock, Newport, Isle of Wight; J. Baker, Portsea; J. Douglas, Summerland, Southsea; C. W. Thompson, Guildhall; Henry Kimber, 79, Lombard-street; and H. Jones, Martell-road, West Dulwich.
PRINCE OF WALES HOT-SPRING COMPANY (Limited).—Capital 50,000*l.*, in 5*l.* shares. To carry on business as hotel keepers, &c. at Southport. The subscribers are—Thomas R. Bower, 13, Albert-road, Southport, 100; W. Clark, 2, Shakerspear-street, Southport, 500; D. Lewis, Southport, 5; W. Fealy, Southport, 200; E. Iddon, 20, Prince's-street, Southport, 400; W. Robson, Southport, 100; J. Witham, Lord street, Southport, 100.
CHEADLE HULME LAND, BUILDING, AND INVESTMENT COMPANY (Limited).—Capital 30,000*l.*, in 10*l.* shares. To acquire land at Cheadle Hulme, Cheshire. The subscribers are—J. C. Jones, Oaklands, Cheadle Hulme, 50; A. Boyd, Beechfields, Cheadle Hulme, 1; F. W. Knappman, 34, Bolsover-street, 3; S. B. Ellis, Edward street, Bury, and C. P. Briggs, High-street, Shoreditch.
CARVILLE WHERRY COMPANY (Limited).—Capital 5000*l.*, in 1*l.* shares. To carry on business as ship and barge owners, &c. on the Tyne.
BENJAMIN LANE, BARKER, AND COMPANY (Limited).—Capital 5000*l.*, in 10*l.* shares. To acquire the Liberty Ironworks, Stalybridge.

CORNISH MINE SHARE MARKET.—Tin shares continue scarce during the week at quotations, in consequence of holders having increased confidence in better prices for tin at no distant date, smelters offering, as we are informed, two above the present standard to the mines. The tin market is steady, and prices are keeping firm. Capitalists are beginning to invest in this great industry, which offers, besides the inducements of dividends, the chance of doubling the principal. The following are the closing prices:—Carn Brea, 46 to 47; a good business has been done. A rise in tin would give these the greatest rise of any shares in the market. Cook's Kitchen declined to 7½, 8, but have again advanced to 8, 9, closing firm. Dolcoath have kept firm, and close 45 to 47. East Pool enquired for at about 15, closing 14½ to 15½; it is not yet known who will be appointed here in the room of Capt. Hosking, who has been appointed to the Telly estate. East Lovell, 7½ to 8½; North Buxy, 10 to 9. Kinross called 10s. to 11s.; the meeting will be held on Friday, when call will probably be made. Providence nothing doing, shares called 3 to 4; at the meeting, on Tuesday, a loss of 518*l.* was shown; the agents expect to show, however, a better state of affairs next time. St. Ives Consols adventurers have resolved to wind this old mine up; it is probable that another company will be found to take it. South Carn Brea, 36s. to 38s. South Condurow, 5 to 5½; this mine is looking remarkably well. South Crofty in demand, and shares have advanced to 22½, 23½, at which they close. South France called to 3. Riofret have been moderately dealt in, and close firm, 23 to 24. West Bassett steady, and enquired for at 6½, 6½. West Wheat Beton, 35 to 37; a few shares have changed hands, but the market is limited for them. West Frances in demand, and advanced to 8½, at which they close. West Tolgus enquired for at 54 to 54. Wheel Kitty (St. Agnes), 3 to 3½; Wheel Uny have been a little dealt in at 2½ to 3½; Wheel Jane, 3½ to 4; West Poldice called, 12 to 14; and Wheel Owles, 180 to 200. Wheel Unity Wood, 10s. to 10s.; there is an improvement for copper here.

SALE OF ARSENIC.—Arsenic continues to realise good prices, and its production is of considerable importance to some of the Cornish mines. A sale of arsenic took place at South Crofty Mine, on Saturday; the quantity was computed to be about 70 tons. No 1 parcel made 8*l.* 8*s.* 6*d.* per ton; No. 2, 7*l.* 10*s.* per ton; and No. 3, 7*l.* 9*s.* per ton. The average price was about 8*l.* per ton. The whole was sold by tender.

SALE OF MACHINERY.—The machinery and materials at Blencoe Mine were knocked down at public auction to Messrs. Harvey and Co., for 1725*l.*

CHINA CLAY IN THE WEST.—At the Fendens Society's exhibition last week, a sample of china-clay from Baleswood Common was sent by Mr. E. Borlase, the quality of which was good, and it is to be hoped that a new and profitable industry may arise out of the discovery of this valuable article in the district.

SOUTH CARADON—LUCKY TRIBUTERS.—Two miners and a boy took a pitch in somewhat neglected ground, at 13*s.* 6*d.* in 1*l.* tribute, and during their "take" (two months) they will carry out of the counting-house about 400*l.*. The same men are now working the pitch at 2*s.* in 1*l.*, and will again do well at that reduced tribute.

SOUTH CARADON.—The shareholders of this old and rich mine are to be congratulated on the prospect which follows their year after year. A new feature has been introduced, which, it is anticipated, will considerably increase the returns—the working of the West Caradon Mine in conjunction with that of South Caradon; and it was announced at the quarterly meeting on Tuesday that the sett had been executed, and operations would be commenced without delay. At the meeting on Tuesday a dividend of 2*l.* per share was declared, amounting to 1024*l.*, and paid on account of engine, pitwork, &c., at Rule's south shaft 500*l.*, and a balance of 2944*l.* carried to the credit of the next account.

EAST POOL.—It is stated that at the coming account the profits for two months will be shown to be about 2000*l.*, notwithstanding the low price of black tin.

CORNISH COPPER MINES.—It is probable that increasing attention will be paid to Cornish copper mining, especially now that a process is in operation which will render the poorer sections of the copper lodes profitable for working. It is stated that the treatment of the ores raised at New Consols and Holmbush by the Nascent process is proving a complete success. From 8 to 9 tons of precipitate per month are now being made from ores that were previously thrown away, the price realised for the precipitate being about 70*l.* per ton. It is well known that in many of the abandoned copper mines of Cornwall large quantities of copper ore of a low percentage are discovered, but remain unworked, but with the extraction of the copper by this process they would be likely to prove a commercial success. It is contemplated to re-work some of the mines that were abandoned about 50 years since, and, in addition to the raising of copper ore of the ordinary quality, to proceed, by the Nascent process, with the extraction of the copper contained in the

poorer sections of the workings. It is believed that, with judicious management and an adequate capital, many of the old mines will pay for re-working.
MINING NOTES.—At South Condurow, Capt. Rich reports that the ground is easy for driving the deep adit, north of junction shaft, and they think the lode is very near. At Cathedral Mine, Capt. Mitchell reports that they have discovered the Wheel Hope lode, one of the champion lodes of the district, and it will be reached in a few fathoms further sinking. At East Bassett, Capt. R. Pryor reports that the men driving the 30 cross cut are making fair progress, but have no indications as yet of the lode. Pedn-ar-dra Mine has sold 10 tons 17 cwt. of black tin, at 50*l.* per ton. South Condurow sold on the 28th ult. 19 tons 12 cwt. for 981*l.*. Wheel Uny sold 11 tons 12 cwt. for 567*l.*
THE TIN STANDARDS.—On Aug. 31, the tin standards again advanced 2*s.* per cwt., and are now as follows:—Common, 80*s.*; refined, 81*s.*—*West Briton.*

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, Sept. 8: Setting Report: To sink below No. 1 adit level, at 7*l.* 10*s.* per fathom; the lode at present is not so good as it was last week. It is now worth 8*l.* per fathom. To stop the roof of No. 1 adit, at 6*l.* per cubic fathom for the month; the lode here has fallen off in value, and is now worth 15*l.* per cubic fathom for lead.
BAMFYDE.—J. Juleff, H. T. Haley, Sept. 9: We are pleased in being able to say the 112, west of No. 4 shaft, is looking well, and worth 15*l.* per fathom. The 102 west is producing good copper ore, and worth 5*l.* per fathom. The rise above the 90 is worth 7*l.* per fathom. The stope is of the same value as last reported.
BEDFORD CONSOLS.—George Rowe, Joseph Mitchell, Sept. 7: The lode in the winze sinking below the 57 still maintains its size and character, being over 8 ft. wide, producing very strong mundle and good stones of ore, altogether of a very kindly appearance. The lode in the stope in the back of the shallow levels is looking well, and producing the usual quantity of arsenical mundle. All other points of operations are without change.
BEDFORD UNITED.—W. Phillips, Sept. 9: We shall not take down the lode in the different levels until next week. The shaft and operations in connection with it are being pushed on with all speed, and are near completion. We shall operate upon the lode next week, and from present appearances shall be able to give a very favourable report.
BOG.—W. T. Harris, J. Barkell, Sept. 8: Having pretty well cleared the bottom levels of stuff, we shall now commence putting in penthouse, &c., preparatory to sinking the engine-shaft below the 175 fm. level. The 175 fm. level west, on nine lode, is producing some nice stones of lead, and very promising for an improvement. This same level, driving east on south lode, is now worth 2 tons of lead per fathom. We have commenced clearing the 183 east, on the south lode, and hope shortly to be in a position to resume the driving, and lay open fresh ground for stope in this direction. The lode in the winze sinking below the 145 fm. level is not looking so well for lead, now worth 15 cwt. per fathom, but we expect it will again improve as depth is attained. The stope in the back of this level, east and west from the winze recently holed to the 145 fm. level, are turning out fair quantities of lead and blende, worth about 25*l.* per fathom. The ground in the 130 cross-cut driving north is much changed in character, and we are in expectation of meeting with an important improvement. We are making fair progress in clearing the 115 fm. level, west of engine-shaft on main lode, which when done we shall have a great many fathoms in length of producing good stones of lead, and we shall have a regular change in the 60 or 50 fm. level, yielding blende quite equal to last report. Our tribute pitches are also yielding lead and blende in fair quantities.
BURROW AND BUTSON.—John Christophers, St. Agnes, Sept. 4: We have this day set two stope in the back of the 30, west of Tonkin's shaft, at 3*l.* 10*s.* per fathom. Of tribute pitches we have set to four men in the back of the 30, east of Tonkin's shaft, on the north or lead lode, at 8*l.* 10*s.* per ton of lead and 1*l.* per ton of blende, and 10 fms. further east a pitch to three men on the same lode and at the same tribute, and 20 fms. west of engine-shaft in the same level and at the same tribute, to two men at 8*l.* 10*s.* for lead and 1*l.* for blende. In the 20, 3 fms. east of Tonkin's shaft, we have set to two men a tribute of 8*l.* 10*s.* for lead and 1*l.* for blende, and further east, in the back of the level on the same (or lead) lode, two more pitches to two men in each pitch, at 8*l.* 10*s.* per ton of lead and 1*l.* for blende. Also one pitch in the same level, but west of Tonkin's shaft, to two men, at 8*l.* 10*s.* for lead and 1*l.* for blende. In the bottom of the adit level, between Old East and New East shafts (or about 95 fms. east of Tonkin's shaft), we have set two pitches, one to two men and the other to three men at 8*l.* 10*s.* per ton for lead and 1*l.* for blende.
CARGILL.—John Jennings, Sept. 8: Better progress has been made in sinking Doctor's engine-shaft during the last fortnight; the lode is about 18 in. wide, mixed with mundle, capel, and occasionally stones of lead. In the 11, east of shaft, on the south part, the lode is squeezed smaller than usual by a tight bar of ground; this I hope to get through soon, and see the lode again of a better character. The 11 east, on the north part, is 1 ft. wide, composed chiefly of fine quartz and floucan, and good progress is being made in driving. The lode in the 11 west is disordered by a cross head or branch; this I expected to meet with, judging from what I have seen in the level above, just over this point; there is still a little lead vein in the lode, and I hope to see better results after we get out of the influence of this disordered part.
CATHEDRAL.—Joseph Mitchell, Sept. 9: The various points of operation are yielding their usual quantities of copper. A decided improvement is taking place in the lode in the engine shaft; the hard bar of ground having been passed through, the lode is getting larger and richer. All work going on satisfactorily, and the machinery in excellent order.
CRENVER AND VIBRAL ABRAHAM UNITED.—Wm. Thomas, S. Arthur, Sept. 8: St. Agnes Shaft, No. 228, driving west, the lode is 3 ft. wide, yielding 1 ton of copper ore per fathom. St. George's Shaft: In the 215, driving west, the lode is 2½ ft. wide, producing copper ore to dress. In the 215, driving east on the south lode, and west of shaft, the lode is 1½ ft. wide, yielding a little copper ore. Woolf's Shaft: In this shaft sinking below the 220 the lode is 4 ft. wide, yielding a little copper ore, and having a very kindly appearance. In the 220, driving east, the lode is 5 ft. wide, and will yield 5 tons of copper ore per fathom. Blewitt's Shaft: In the 234, driving west, the lode is 3 ft. wide, occasionally yielding stones of copper ore. In the 234, driving east, the lode is 3 ft. wide, yielding a little copper ore, having a kindly appearance. In the 210, driving west, the lode is 3 ft. wide, yielding 1 ton of copper ore per fathom. In the 200, driving west, the lode is 3 ft. wide, yielding a little copper ore.
CWM DRYFOR (Copper and Silver Lead).—Captain Jewell, Sept. 9: South Cross-cut: The No. 4 level, eastward from this cross-cut, has been extended to 365 yards; it is being driven on the No. 4 (silver lead) lode, which produces 1 ton of ore per fathom; at the present time the ground is very spare for driving, owing to the hard nature of the grit rock, which is full of quartz, and the lode is not continuous. No. 3 level has been driven 35½ yards east of south cross-cut, on No. 3 (south) lode, which is yielding good stones of copper and lead ore. I expect shortly to see a considerable improvement in this lode, as the ground is getting easier for driving. North Cross-cut: The level eastward from this cross-cut has been driven 28½ yards on No. 4 (north) lode, which yields 5 cwt. of lead ore per fathom; the ground is still very hard; we are pushing on as fast as possible to communicate with the old men's shaft being sunk to meet the level. Old Men's Shaft: This is now down 45½ ft. from surface, on No. 4 (north) lode, leaving 8 ft. more to sink to communicate with the level. The lode at the shaft is yielding 1 ton of copper ore per fathom, and lead ore. Surface: The building of the drum walls is making headway. We have also commenced foundations for crusher-house, which will be pushed on so as to be ready to receive the crusher as soon as the winding drum, &c., on the top of the incline, are erected. Meantime the dresser and his staff are getting a good pile of ore ready for the crusher.
CWM ELAN (NEW).—W. Goldsworthy, Sept. 4: The winze sinking under the 10, west of shaft, is holed to the 20 underneath, and by this communication this part of the mine will be ventilated; the part of men who were working in the 10, west of shaft, will be able to get to the 20, and the lode here producing 25 cwt. of blende ore per fathom, and yielding fine stones of lead ore; the appearance of the lode is very kindly. All other ends and stope in operation are making good progress, and of the same value as last reported. There are about 6½ tons of lead ore at the railway, and about 3 tons of lead and 3 tons of blende already dressed in the bin at the mine; we should have had more lead and blende dressed, but water has been low the last week. There is a quantity of ore left broken underground.
DE BROKE.—T. Hodge and Son, Sept. 8: Wilson's shaftmen are obliged to suspend sinking for the time until the 10, &c., with which they are engaged in any of the other bargains. Next Saturday being our setting-day, a full report will be sent you. We shall sample at our usual time.
DENBIGHSHIRE CONSOLIDATED.—John Pryor, Sept. 9: In the 112 east we are now meeting with small quantities of ore daily, and the ground through which we are driving seems most congenial, and I expect, upon reaching the south side of the lode, to report a further change. In the 112 west new lode we look better than we have done for some time; but we should be satisfied. I like the appearance of to-day very much. In the north cross-cut, out of same level, the ground is becoming more sparry, and the quantity of water issuing still continues. We cannot make great progress on account of hard ground, but as soon as the lode is reached we expect a rapid exploration. The machinery is all in good working, and all points proceeding satisfactorily.
DEVON GREAT CONSOLS.—Sept. 10: There is nothing new in the report from the mines this week. The aggregate value of the workings amounts to 50 tons per fathom.
DUBBY SYKE.—Wm. Tallentire, Sept. 8: There is no alteration in the cross-cut at Dubby Syke level yet; the men are making very fair progress in driving, considering its hardness. Shooting Box Level: We have almost got through where the level was closed, and can see over the rubbish, and the level is standing now opened out about 160 fms. There has not much been done at the shop this week, but the stable is roofed. The new road has been covered for 300 yards with cuttings.
DYLFIFE.—E. Rogers, Sept. 8: There is nothing new in any of our different points of operation. A setting report will be sent you next week. We sold last Wednesday 80 tons of ore to Mr. G. Barr, realising 1180*l.*
EAST BASSET.—R. Pryor, E. Adams, Sept. 8: The lode in the stope in the back of the 50, at flat roof shaft, has improved a little during the past week, being now worth fully 28*l.* per fathom for copper. There is no other change throughout the mine on which to report. We have at surface about 24 tons of good copper ore, and shall draw to surface during the week about 5 tons more.
EAST CARADON.—James Kilow, Thomas Trelease, Sept. 8: Canter Lode: In the 130 east the lode for the part carried is composed of mundle, peach, and of a similar character, but wet and troublesome for sinking. The men are sinking in the bottom of midway, on the branch, for ventilation (near the end), where it will yield 1 ton of ore per fathom. Mark's Lode: In the 60 and 72, driving east, the lode is about 2 ft. wide, composed of quartz, gossan, &c., intermixed with spots of ore. The ground in the 72 cross-cut north is granite, and in the 130 cross-cut, east of Williams's shaft, it is granite, and favourable for driving.
EAST CHIVERTON.—R. Southey, Sept. 8: We shall commence sinking the engine-shaft for bearings and clutern below the 64 next Monday; when this is completed it will be necessary to make some alterations in the pitwork, which will necessitate some little delay, after which the sinking will be resumed with all possible dispatch. Judging from the channel of ground passed through in the 35, we are daily expecting easier ground in the 64 cross-cut north, when greater speed will be made in cutting the lode, which is being looked forward to with great in-

terest. We are also driving south in this level to intersect the south lode, so that we have two very important points to come off shortly, which I have great hopes will be attended with profitable results.
EAST VAN.—W. Williams, Sept. 8: The new shaft is down 8 fms. 4 ft.; set to mine men, at 280*s.* per fathom. The shallow adit level (for draining the surface water from this shaft) is now within 8 fms. 1 ft. of reaching the shaft; set to six men, at 50*s.* per fathom. We have crossed several very nice strings of silver from set at 90*s.* per fathom. Four of these are now engaged driving the shallow adit, but as soon as that is completed they will return to their places.
EAST WHEEL GREENVILLE.—E. Hosking, W. Bennetts, Sept. 4: There is no change to notice since our last.
EAST WHEEL GREENVILLE.—E. Hosking, W. Bennetts, Sept. 9: The stope below the 121 west is worth 5*l.* per fathom. There is no change to notice in the 120 cross-cut north. The stope above the 110 east is worth 6*l.* per fathom. The rise above the 45 east is producing good stones of copper ore. The lode in the 24 fm. level, west of cross-cut, is 12 inches wide, of a kindly appearance, and producing a little ore.
FRANK MILLS.—James Rowe, jun., N. Addems, Sept. 9: The engine-shaft is sunk 10 fms. below the 145. We purpose sinking 2 fms. more on the cross-cut west to intersect the western lode. The eastern lode in shaft is producing a little lead, and improving as we are nearing the junction of the east and west lodes. We have commenced to sink a winze in the bottom of the 145, on west lode, which is producing good stones of lead. The ground in the 115 cross-cut, west of engine-shaft, is more favourable for driving. At the 60, north of engine-shaft, we are driving towards the Exmouth Mine under the lode. We shall drive about 4 fms. more and then cut through the lode. The 60 is being driven north of cross-cut south of Orchard air shaft, on eastern branches, which are producing a little lead, and looking favourable for an improvement soon. We have about 4 fms. more to drive to get under the run of ore ground gone down in the bottom of the 45. The 45 driving north of No. 1 cross-cut, south of Orchard air shaft, on eastern branches, is producing 10 cwt. of lead ore per fathom. We are opening up a good section of ground here, which will set at a low tribute. At the 30, north of engine-shaft, we are cross-cutting west to intersect one of the western lodes, on which considerable quantities of lead have been raised further north. We have nice tribute pitches working by 24 men at an average tribute of 7*l.* per ton. These tribute are earning fair wages. We are preparing floors, &c., for Dingey's pulveriser, which we hope to have working in a short time. Machinery and pitwork in good working order.
GAWTON COPPER.—G. Rowe, G. Rowe, jun., Sept. 4: The lode in the 117, east of King's engine-shaft, is showing a very kindly appearance, producing 3 tons ore and mundle per fathom. The lode in the stope in the back of the 17 is without change, worth 8*l.* per fathom. The lode in the winze sinking below the 105 east is worth 15*l.* per fathom. The lode in the stope in the bottom of the 95 is worth 8*l.* per fathom. The rise in back of the 95 is communicated with the winze sunk below the 82, where we have commenced stopping upon the lode both east and west, worth 14*l.* per fathom. The lode in the stope in the bottom of the 82 east is worth 8*l.* per fathom. The cross-cut going into the north part of the lode at the 82 is producing good stones of ore. The rise and stope in the back of the 70 are worth 10*l.* per fathom.
GOGINAN AND LEVEL NEWYDD.—Sept. 6: Bryn Pica shaft is being sunk with full force by nine men, and every effort used to get it down as quickly as possible. The turbine, hauling-gear, &c., with all its connections at the 60, has been completed, and the same set to work, but the present supply of water is insufficient to draw from the 110, and we are now busily engaged putting in pipes, &c., to get more water down from surface, and also making larger haulers to convey the same over old workings in the adit, which are over 100 ft. long. Other points made without any change of moment, the tribute pitches continuing to yield about their usual quantities of ore. All surface operations are being carried on regularly, and we have a good supply of water. We shall sample 25 tons of silver lead ore to-morrow week, the 14th inst.
GORSIEDD AND MERLLYN CONSOLS.—W. Edwards, Sept. 9: In the driving east upon the Merlyn vein (going in the direction of original land) the lode is looking better to-day than it has done, and there is now indication of it opening out to a good size. At this point we are entering entirely unexplored ground for the first time. In the driving east the lode is very thick, and the water is issuing from the forebore, an indication that we are nearing the compact ground, and consequently are in great hopes of cutting into something good soon. The adit driving is easier for progress. We are looking forward to hand you some good news.
GLASGOW CARADON CONSOLS.—W. Taylor, W. J. Taylor, Sept. 7: There is not much further to notice in the 78 east, which we are pushing on by six men as fast as possible. In the 78 west the lode is worth 8*l.* per fathom. The middle level is worth 5*l.* per fathom, and likely further to improve. This level, east of the south part, is worth 15*l.* per fathom. We have commenced to rise in the back of this level to communicate with the winze sinking on it from the 68; the lode in the rise is worth 15*l.* per fathom, and in the winze 15*l.* per fathom. This level west is also worth 15*l.* per fathom. We have commenced a winze in bottom of this level, which will come down some distance east of the 78 east; the lode is worth 15*l.* per fathom, and in easy ground. No other change to notice. The stope and pitches throughout the mine continue about the same value as last reported. We are pleased to say that we have holed the new shaft to the rise by a horse-hole, which came down exactly on the top of the rise and set off the water; we have now about 14 ft. to sink through, and this done we shall make the shaft good below as fast as possible. The quantity of ore for our next sampling is computed 200 tons, which will be sold on Sept. 23.
GLYN.—James Roach, Sept. 9: The lode in the winze is still exceedingly promising, and yields stones of lead; we believe our anticipations will be fully realised when the whole width of the lode is developed at a point some 3 or 4 fathoms below the present bottom of the mine, when we intend to drive the first level on its course. We are promoting the whole of the machinery in a day or two; when it arrives it will be immediately attached to that already erected, which will enable us to pump and wind at once.
GREAT LAXEY.—J. Cornish, Aug. 31: Deep Mine: The 235 north and south ends from engine-shaft are looking much the same as for some time past. In the 235, driving south from Welsh shaft, the lode is producing a little saving work, and the same remarks will apply to the end driving north at this level opposite. In the 220, driving north, we have not yet got sufficiently into the slide to let down the water, but we have still lode in the end consisting of a little blende, sulphurous mundle, and copper. The 200 end has rather improved, and the lode more thickly disseminated with ore, which we think augurs well for a much more important improvement very soon. All the other operations in this section of the mine are without any particular change to notice. Dumbell's: The part of the lode being carried in the 200 north (2½ ft.) is worth 15*l.* per fathom. In the end driving south at this level the lode has not been so rich for a short distance, but it has again improved, and is now worth 40*l.* per fathom. In the 185 north we are daily expecting to communicate with the winze sunk in the bottom of the 170, but the part of the lode being carried is only producing a little ore at present. No. 1 winze, sinking in the bottom of the 135 east, is down from 11 fms. to 12 fms. but it is being continued in the slide for greater dispatch in reaching the 200 as soon as possible. The lode in No. 2 winze, sinking in the bottom of this level further north, is looking very promising, and worth 45*l.* per fathom. We have no change in the 170 and 165 north ends. The winze sinking in the bottom of the latter is worth 35*l.* per fathom. The lode in the 140 south has so far been small and unproductive to see, but it is not advanced far enough south to intersect the ore-bearing ground seen in the 155 fathom level and other lower levels. The lode in the 125 fathom level north has not been taken down for some time past, and we have been driving by the side of it, as usual, for progress. It will be sinking down this week, and value its reported in our next. The lode in the winze, sinking the bottom of the 110 north, is worth 75*l.* to 80*l.* per fathom—a good lode. The stope in this part of the mine also are without any particular change to notice. The new dam has been filled with water, being partly full now, and only requires fencing, &c., to be complete. All machinery throughout the mine is working efficiently, and our dressing and all other surface—in fact, all operations are progressing regularly, and pretty well. It is with deep regret I have to report that our miners lost their lives last Saturday, the 28th ult., by a premature explosion of gunpowder in the ground which they were working; no damage was done beyond the unfortunate loss of life. Up to the present I cannot learn that any blame is attributable to the mine or its management; and I purposely abstain from giving any particulars, as they will all be brought forward at the adjourned inquest, to be held on Monday, Sept. 6.
GREAT RETALLACK.—J. Harris, Sept. 4: The lode in the stope above the 40 is producing about 1½ ton of blende per fathom. The ground in the shaft is still stiff for sinking; consequently less progress has been made than I anticipated week ago, but I hope we shall soon meet with a change for the better. I have set two more pitches to day on tribute, to four men, in the 30 fathom level, at 1*l.* per ton for best blende. We have sampled our blende to-day, which I have computed 100 tons.
GREAT RETALLACK.—John Harris, Sept. 8: The ground in the shaft continues spare for sinking, it being in a floor of black stiff killas, and very jointy. The stope above the 40 is not looking so well as when I last advised you, and I have put the men to strip down the south side of the 40, upon a lode that is worth about 1 ton of blende per fathom.
GREEN HURTH.—W. Vipond, Sept. 3: There is no material change to notice in the mine. The millwrights are at work erecting the second wheel. We have now 140 bags of ore dressed at surface. The weather has been very unfavourable for outdoor work for several days.
GROGWINION.—John Kito, Sept. 8: There have been but few changes in the mine since the date of my last report. The intermediate level, driving east on No. 4 lode, has improved very much, and is yielding very good ore; at the 38, on the back of the 150 west, is still worth 8 tons of ore, or 24*l.* per fathom. The lode in the two stope in the bottom of the 140 west, east and west of Allen's winze, is worth on an average 8 tons of ore, or 30*l.* per fathom. No lode has been taken down in the 140 west since last report; its value, therefore, remains the same—3 tons of ore, or 10*l.* per fathom. In the two stope in the bottom of the 120 west the lode is worth on an average 6 tons of ore, or 15*l.* per fathom. In the Antioch winze, below the 110 west, the lode is still worth 5 tons of ore, or 15*l.* per fathom. The lode in the stope in the back of the 110 west is still worth 3 tons of ore, or 12*l.* per fathom.—E. S. Our next monthly sales of copper ore, computed 255 tons, will take place on the 23rd inst.
ILLOGAN.—R. Pryor, Sept. 5: No change has taken place throughout this mine during the past week worthy of remark. Friday next being our pay and setting day a full report shall follow.
KINGSTON CONSOLS.—G. F. Richards, Sept. 9: The erection of the pumping-engine has been completed, and the same was started to work on Saturday last, giving every satisfaction. The mine can now be very speedily drained, and

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, SEPT. 10, 1875.

COPPER.		£	s.	d.	£	s.	d.
Best selected...p. ton	91	0	0	92	0	0	0
Tough cake and tile	95	0	0	96	0	0	0
Sheathing & sheets	95	0	0	96	0	0	0
Boils	95	0	0	96	0	0	0
Bottoms	95	0	0	96	0	0	0
Old	90	0	0	91	0	0	0
Australian, Wallaroo	82	0	0	83	0	0	0
ditto other brands	89	0	0	90	0	0	0
Chili bars, g.o.b.	82	0	0	83	0	0	0
Wire	per lb.	0	11	11	0	11	11
Tubes	per lb.	0	1	0	0	1	0
BRASS.							
Sheets	per lb.	9	10	9	10	9	10
Wire	per lb.	9	10	9	10	9	10
Tubes	per lb.	9	10	9	10	9	10
YELLOW METAL SHEATHING.							
Sheets	per lb.	7	10	7	10	7	10
Foreign on the spot	24	10	0	24	15	0	0
to arrive	24	10	0	24	15	0	0
ZINC.							
In sheets	per lb.	30	10	31	10	0	0
IRON.							
English blocks	per ton	90	0	90	0	0	0
Do., bars (in bulk)	per ton	90	0	91	0	0	0
Do., refined	per ton	90	0	91	0	0	0
Do., common	per ton	89	0	90	0	0	0
Straits	per ton	89	0	90	0	0	0
Australian	per ton	81	0	82	0	0	0
TIN-PLATES.							
10 Charcoal, 1st qua.	£1	10	0	11	0	0	0
IX Do., 1st quality	1	10	0	11	0	0	0
IX Do., 2d quality	1	8	0	11	0	0	0
IX Do., 3d quality	1	12	0	14	0	0	0
IX Coke	1	7	0	11	0	0	0
IX Dite	1	7	0	11	0	0	0
Canada plates, p. ton	14	10	0	15	0	0	0
Do., at works	14	0	15	0	0	15	0

* At the works, 1s. to 1s. 6d. per ton less. † Add 6s. for each X.
Tern-plates 2s. per box below tin-plates of similar brand.

REMARKS.—The past week has been uneventful; but the markets have maintained their position, and the tendency very generally has been towards increased firmness. So far as it is possible to form an opinion with regard to the future, it seems improbable that there will be any very important fluctuation in price or alteration in the position of the markets until the turn of the year. The autumn trade, if limited in extent, is likely to be fairly steady; and though the support afforded by those markets whose ports are closed during the winter will in due course be withdrawn, yet the home trade and that with the Continent appears to be on a sufficiently firm basis to ensure pretty generally a fair business. Prices during the winter quarter may be subject to some slight further depreciation. The harvest operations are drawing to a close, and the almost universal continuance of favourable weather for the ingathering of the crops will materially tend to mitigate the disastrous consequences which must have ensued had it been otherwise.

The political atmosphere is becoming clearer, and it is not probable that any contingency will occur to hinder the progress of business.

COPPER.—This market has been stiffening throughout the week, and a fair amount of business has been concluded, at full rates; but there has hitherto been no important change in quotations. The price of copper ore, relatively with that of unwrought copper, leaves apparently no profit upon the latter, and the slightly enhanced quotations for manufactured are not such as to place this description of copper in a better position. Whether the value of ores will come down, or that of wrought copper advance, it is not easy to say, but the existing anomaly cannot last for ever. At the present moment Chili produce is held firmly. The demand for the home trade is satisfactory, but for India it is not so good, and what orders might be given out at are at limits which it is impossible for sellers to accept. Yellow metal is quiet, at 7½d. Chili bars, 82s. cash, g.o.b.; special brands, 82s. 6s. and 82s. 10s. English tough, 88s. and 89s.; best select, 90s. and 91s.; India 4 by 4 sheets, 94s. 10s. and 95s.; and strong copper, 97s.

IRON.—There is nothing fresh in the position of the iron trade in South Wales, and there is no reason to expect that any new feature of interest is likely now to arise until the requirements for the ensuing year come to be considered. That measure of support which the market has received from the execution of orders for Russia, small though it has been in comparison with the experience of past years, must soon cease for the current season, in consequence of the closing of the Northern ports for the winter, and it is not likely that now, so late in the season, any fresh orders will be booked for these ports. Enquiries from other quarters are much as they have been, and present but little to encourage with regard to the immediate future. The rail market is specially quiet; a small amount of business has been done at 6s. 18s., but the ordinary quotation for usual sections is 7s. per ton.

In the North of England the demand for pig-iron is fully maintained, the run being upon foundry qualities, which are very firmly held. This steady enquiry, which has continued for a considerable period, seems likely to last for some time. The demand for finished iron is very sluggish. There is very little doing in rails and in merchant bars, but the enquiry for plate-iron is moderately good. Pigs are quoted: No. 1, 5½s.; No. 3, 5s.; No. 4, 4s. 7½s. The work in North and South Staffordshire has been held in abeyance for some little time, while the Board of Conciliation has been employed in settling various questions. The session has been defeated in the preliminary object it had in view in consequence of the unco-operative conduct of the operatives, who struck work during the progress of the negotiations. Their representatives feeling that they were seriously compromised by the conduct of the men, summoned a large meeting of their constituents, which has been held at Great Bridge, at which some wholesome advice was administered, and some home truths told.

It appears that the men highly approve of conciliation boards, if the result of the conciliation meeting be to raise the scale of wages; but, should the verdict of the board tend in the other direction, it appears that they are rather disposed to repudiate the scale and deeds of their representatives. They were told at the meeting that a school board was even a greater necessity than a conciliation board, and the disastrous results which must accrue from such a breach of the good understanding which has previously existed were pointed out. During the long protracted struggle between capital and labour through which we have been passing these boards have from time to time rendered such important service that it is much to be regretted that an occurrence should have taken place which must shake confidence for the future in this mode of meeting for the settlement of differences.

The market for Scotch pig-iron has been fairly steady. There have been fluctuations, but not to a greater extent than about 1s. per ton, and at the close of the week pigs are about 6d. per ton dearer than last week, the last quotation being 64s. 6d. to 64s. 9d. There has been a special demand for certain brands that are in request, and it seems probable that until the close of the shipping season prices will be firmly adhered to.

Week ending Sept. 4, 1875	Tons	10,616
Week ending Sept. 5, 1874	Tons	9,483

Increase 1,133
Total increase for 1875 Tons 90,837

LEAD.—The firmness of this market still continues, and good soft English pig is not obtainable under 23s. to 23s. 5s., and soft Spanish, without silver, 22s. 15s.

SPELTER.—The market is firm. Business in Silesian is reported—spot, 24s. 10s.; special, at outposts, 24s. 15s.; and W.H., 25s. 5s.

ZINC.—A parcel of foreign has been sold at 28s. 17s. 6d., ex ship; also 50 tons London rolled, 28s. 5s. and 27s. 17s. 6d.

QUICKSILVER.—This metal has been without variation during the week. The last price at which business has been reported is 11s. 11s.

TIN.—Straits tin has been firm throughout the week, and a fair average business has been transacted. The price is improving, and the announcement that the Dutch Trading Company's sale, to be held on the 29th inst., is to consist of 22,900 slabs of Banca appears to have afforded some further stability to prices.

TIN-PLATES.—The market is very quiet, and the fact that the price of tin is advancing will only render makers less able to tempt buyers by submitting to further concession in quotations.

THE IRON TRADE (Griffiths's Weekly Report).—Friday Evening. The Glasgow market for G.M.B. iron has been steady during the week. The closing price this day was 63s. 6d. To day G.M.B. was quoted 64s. 6d. at the close, an advance of 1s. per ton. The following is our advice of to-day's market:—At forenoon market no business was reported. In the afternoon several lots changed hands at 64s. 6d. a month open, at which price the market closed with buyers, sellers 64s. 6d. cash. We quote makers' No. 1 iron as follows:—Gartsherrie, 72s.; Coltness, 75s.; Calder, 75s.; Langloan, 74s.; Summerlee, 67s.; Monkland, 64s. 6d.; f.o.b. Glasgow; Glengarnock, 69s.; Eglinton, 64s. 6d.; f.o.b. Anderson Shotts, 74s.; f.o.b. Leith Kennell, 64s., business. Our market for all kinds of iron this week has been more active, and the general business has increased. Some good orders have been given out for marked Staffordshire bars.

Most of the houses who make this class of iron must have their hands tolerably full. Some good contracts have been sent into North Staffordshire for hoops, and the general orders for second-class Staffordshire are more abundant, and prices invariably the turn of the market in favour of the makers. The alteration in the prices of the eminent Yorkshire makers has liberated several Government contracts both for home and abroad, and added considerably to the contents of the order-

books of the noted Yorkshire houses. The market for the raw material is firmer in all districts, although the improvement is less noticeable on the West Coast. We have no change to notice in tin plates—the market continues sluggish.

Messrs. James and Shakspeare.—COPPER: No transactions were reported in ore or regulus. Chili bars were very quiet in the early part of the week, owing to the heavy charters for the last half of August, and sales could only be made at a reduction of about 10s. to 20s. from the nominal prices; during the last few days, however, buyers have again come forward, and their operations have been sufficient to effect a complete recovery from the temporary depression. Yesterday some rumours were afloat of a large purchase having been made in Liverpool, but nothing definite transpired. Australian sorts continue steady, owing to the scarcity of Wallaroo, which brand can now be obtained in moderate quantities at our list rates. English is unchanged, but there is a better enquiry for manufactured from Russia, and values have a somewhat upward tendency.—TIN: English keeps firm, but the demand is small. In foreign descriptions the transactions were again large, both in Straits and Australian, and the market closed last night with every prospect of a further advance in values. The Dutch Trading Company have declared 22,900 slabs of Banca for their sale in Holland on Sept. 29.

Messrs. Henry Rogers, Sons, and Co.—COPPER: The demand has almost ceased since the last telegraphic advice reached us from the West Coast. Prices have given way about 10s. for raw copper, but English maintains its value, second-hand copper being pretty well cleared off the market. Australian copper is high, especially Wallaroo, of which, excepting a few small second-hand samples, there seems now to be no available supply. For manufactured copper the demand has not continued.—TIN: Prices have advanced again, spot parcels being scarce and firmly held.—SPELTER: There being an available supply of English, the demand is being met by Silesian and Rhenish, very high prices being paid for both sorts, especially for delivery this and next month, consumers apparently being without stock.—LEAD remains dear; the demand is, however, only moderate.

Messrs. Grenfell and Rickards.—COPPER: Our market is very steady at 82s. for Chili bars, f.o.b. Importers do not care to part with either furnace stuff or bars below current quotations. For regulus 17s. was refused yesterday. The absence of Wallaroo from the market (the whole available quantity in stock here having been disposed of) causes more demand to run on Burma and English raw.—TIN: The continued large delivery has convinced many of the trade, who were inclined to attribute some portion of the late enormous delivery to "manipulation of stock," that we must realise and act on the fact that the low price ruling for the last 18 months have increased and developed actual consumption of tin beyond what the most sanguine holder could have expected two or three years ago.—LEAD continues in great demand, and still higher prices are asked.

Messrs. Sanford and Bird.—COPPER: The Chili charters for August were 4200 tons, against 3700 tons for July, and 5700 for June. The market is steady at 82s. for g.o.b.'s. English sheets 95s. to 97s., and ingots 88s. to 89s. per ton. Australian is nominal. Tin has improved to the extent of about 2s. per ton all round, and closes very steady in price. Consumption and deliveries from stock continue large, and though the production of tin-plates has undoubtedly fallen off, the demand from other quarters is exceptionally good.—TIN-PLATES: There has been very little doing in tin-plates during the past month, and prices rule in buyers' favour. We quote good charcoal 27s. to 28s.; good coals, 23s. 6d. to 24s.; second-class brands, 22s. to 23s.—LEAD still continues firm at 23s. to 23s. 5s. for good soft English pigs.—SPELTER is somewhat firmer.—SHEET ZINC is steady.

Mr. Murrant.—TIN: In Straits a fair business has been transacted, but no material alteration in values has taken place. An improvement in prices is much hoped for, as most of that now held allows a considerable loss. The week's reported sales have been 300 tons Straits and 150 tons Australian, at 80s. to 82s. 6d. for cash and arrival.—COPPER: Chili: On Thursday last the charters from the West Coast for the second fortnight in August were advised as 3000 tons, of which about 1200 bars and 1000 regulus for the United Kingdom, and 700 bars to France. Price of bars on the Coast 81s. 5s., equal to about 81s. 7s. 6d. per ton in warehouse on this side without merchants' commissions. The effect of these somewhat heavy charters was the sale of g.o.b.'s. to a considerable extent by holders as low as 81s. 10s. for cash. The market has since been nominally rather better. The reported business being 700 tons g.o.b.'s., and named brands at 81s. 10s. to 83s. for cash and prompt.

Messrs. French and Smith.—COPPER quiet, and prices of Foreign have ruled rather in favour of buyers.—TIN: Early in the week prices gave way, but the market has since become active, and the drop has been fully recovered. The Dutch Trading Company announce their next sale for the 29th inst., when 22,900 slabs Banca will be offered.

Messrs. Vivian, Younger, and Bond.—COPPER: The fluctuations in prices have been rather in buyers' favour, but at the close there appears to be an increasing demand, and quotations are 10s. to 2s. over the lowest values for the week, being firm at annexed rates.—TIN, after falling back to 79s. for Australian and 80s. 6d. for Straits, has fully recovered itself. The trade done has been considerable, and the prices close at the best for the week, being 81s. 6d. for Australian, and 83s. for Straits. English, firm in price, but demand light.

A fair average amount of business has been transacted in the MINING SHARE MARKET this week, but there is no material alteration in prices. Good speculative stocks are being quietly picked up for a rise, and the demand at present is more than equal to the supply at present quotations.

Those dealt in have been Carn Brea, Tincroft, West Frances, West Chiverton, Great Laxey, Wheal Crebor, Parys Mountain, Javali, Tankerville, West Tankerville, South Condurow, Wheal Grenville, Hingston Down, Penstruthal, Cathedral, Roman Gravels, East Lovell, Ladywell, Marke Valley, Relistion Consols, Kitty, and others.

South Caradon, 120 to 140; at the meeting, held on Tuesday, the accounts for the three months ending June showed a profit of 1515s., and a balance in hand of 3568s., out of which a dividend of 2s. per share (1024s.) was declared; 500s. was paid on account of new engine, &c., and 2044s. carried forward. The copper ore sold in the quarter was 1343 tons, which realised 10,438s. The agents report that the mine is still looking well, and they see no reason to doubt its continuing so. The sett of West Caradon has been added to the mine. Providence Mines, 3 to 3½; at the meeting there was a loss shown on the quarter of 516s., and a balance against the mine of 475s. The tin sold, 47 tons, realised 2264s. No call was made, and the agents hope to show a better book next quarter. New Pembroke, ½ to 1; at the meeting the accounts showed a debit balance of 851s., but no call was made. In the 120 fm. level there is a good lode, worth 25s. to 30s. per fathom. Bedford United, ½ to ¾; Bog, 7s. to 9s.; Carn Brea, 46 to 48; Cook's Kitchen, 8 to 9; Devon Great Consols, 2½ to 2¾; Dolcoath, 45 to 47.

Wheal Grenville, 2 to 3; this mine has been specially inspected by Capt. Josiah Thomas, of Dolcoath, who refers more particularly to the South Condurow lode as the great point in the future of the mine. This lode, he says, has now been intersected in Grenville in the 130, 140, 150, and 160 fm. levels, and by means of winzes and rises all this ground is laid open for working. At various points he values the lode at 10s., 15s., 20s., and up to 30s. per fathom. It is difficult, he says, to estimate the value of the reserves, but looking at the size and general character of the lode, as far as seen, there is no reasonable doubt that on being more fully explored it will be found to produce large quantities of tin for many years to come. He sees no reason why the returns of tin should not shortly increase, especially if the lodes in the 160 and 130 continue to open out as they have lately done, but to work the mine effectively more pumping power and more stamping power will be required. The South Condurow lode, he says, is always most productive when another lode or branch falls in with or intersects it, and the new shaft by being sunk a little deeper will meet with one of these intersections. Roman Gravels, 1½ to 1¾; the various points in operation at this mine are valued by the agent at 1138s. per fathom, which ought to give very large returns per month. Tankerville, 10s. to 11s.; the lode at Watson's shaft the agent estimates at 6 tons of lead ore per fathom. In the winze below the 152 west the lode is as black as coal, and worth for lead 200s. per fathom. The 152 west is worth 30s. per fathom. There are 150 tons of lead sampled for sale on Thursday. West Tankerville, 1½ to 1¾.

Wheal Crebor, 2½ to 3½; the lode in the winze continues worth 30s. per fathom. The 108 end is now 6 ft. wide, with every indication for a course of ore. East Caradon, 25s. to 30s.; East Lovell, 7½ to 8; Great Laxey, 14s. to 15s.; Hingston Down, 20s. to 25s.; Ladywell, 2½ to 3; Marke Valley, 2½ to 3; Old Treburget, ½ to ¾; Pennerley, 1½ to 1¾; Penstruthal, 10s. to 12s. 6d.; Plymmon, 6s. to 8s.; Prince of Wales, 2s. 6d. to 3s.; Cathedral, 25s. to 30s.; Prince Patrick, 20s. to 25s.; Bampfyde, 20s. to 25s. Parys Mountain, 12s. to 14s.; the returns this month are close upon 1000s. The 90 cross-cut, towards the great open-cast, has not yet met with the lode, but may do so any day; a branch has been met with this week. New Rosewarne, ½ to ¾; the points in the copper lode are worth 20s. per fathom. The best parcel of ore sold last week at 7s. 8s. 6d. per ton. South Carn Brea, 30s. to 35s.; South Condurow, 5 to 5½; South Tolcarne, ½ to ¾; Tincroft, 2½ to 2¾; Van, 2s. to 2½; Van Consols, 1½ to 2; West Basset, 6 to 6½; Relistion Consols, ½ to ¾; West Frances have been in demand, and have advanced to 8½, 9½; West Godolphin, 22s. 6d. to 25s.

West Maria and Fortescue, 6s. to 8s.; West Seton, 32s. to 37s.; West Tolgus, 52s. to 55s.; Wheal Kitty (St. Agnes), 2½ to 3; Wheal Uny, 2½ to 3; Tyllwyd, 17s. 6d. to 22s. 6d.; Prince Patrick, ¾ to 1; Pateley Bridge, 6½ to 7½; this mine, we understand, is doing well, and the new lode is worth 35s. per fathom. West Chiverton, 16 to 17. Birdseye, 1½ to 1¾; Chontales, 11s. to 13s.; Eberhardt and Aurora,

8½ to 8¾; Emma, 1½ to 1¾; Flagstaff, 1½ to 1¾; Frontino and Bolivia, 15s. to 20s.; Javali, 14s. to 16s.; Last Chance, 1 to 1½; Richmond, 9½ to 10½. Sweetland Creek, 3 to 3½; a dividend of 2s. per share has been declared.

The Market for Mining Shares on the Stock Exchange during the week has been again firm, and a considerable amount of general business continuing to be recorded at full quotations. The Metal Market has made further progress in the healthy reaction of the last few weeks, and the trade of the country, as indicated by the Board of Trade returns, just issued, would seem to strengthen the opinion entertained in well-informed quarters that a still more marked recovery will take place in the value of most metals in which miners have a direct interest.

Among Home descriptions, lead mines have been mostly enquired for. Pateley Bridge shares have been largely dealt in 6½ to 7½; the property has again been inspected by Mr. Blenkiron, who confirms the report of the recent general improvement in the mines. The lode in the 10 fm. level cross-cut has improved to 35s. in the end; this is a most important feature, as showing that the course of ore is falling down to the end. In the 20 fm. level cross-cut the lode has been intersected; it is large in size, and promising in appearance; rich stones of lead are already being found. The Gulf vein has also improved to 1 ton per fathom. During the week every point in operation has presented an improved appearance. It is said that some influential parties connected with the lead trade in the North of England have recently taken an interest in the company.

In Silver Mines the chief feature has been the large dealings in Richmond shares. Speculative sales caused the price to run down, but a recovery quickly took place, adverse operators eagerly seizing the opportunity to purchase. The market closes with a firm appearance at 9½ to 10½. Cablegram received: "Week's run \$40,000, No. 2 furnace refined." Doré bars to the value of \$27,000 were forwarded for sale last week. The bullion produced this season amounts to \$790,000, and since the end of February to \$1,011,000. The refinery has this season produced gold and silver bars to the value of \$525,000, irrespective of the lead. The furnaces which were re-lined in the order No. 1, No. 3, and No. 2, are now completed for an uninterrupted run of three months ahead. The summer is reported to be the hottest ever known at Eureka, and the sickness greater. The nights, however, are now cooler, and the sickness abated; it may, therefore, be hoped that the returns in future will be closer to expectations than those during the past two months. It seems to be the result of each year's experience that the best runs are between the months of August and February—the extremes of heat and cold operating unfavourably on the returns. From the progress made with the railway there would seem to be little doubt that the line will be open for traffic from Eureka to Palisade Station on the Central Pacific by November. Every exertion is being made to get the new hoisting machinery fixed, it being found that the old engine is inadequate to the task of raising ore from the depth already attained. The ground at the end of the 200 ft. cross-cut is now less hard, and the work, therefore, executed faster. The drift from the 700 ft. level is also in rock much easier to work in than that in its predecessor at the 600 ft., which was exceptionally hard. The old flat chamber below the Lizette tunnel is still yielding large quantities of ore, while the stope in back of the 500 ft. was nearly worked out. Below the 500 ft. good ore is being extracted; the ore in the 600 ft. level will not be available till the new hoisting engine is ready. Explorations are being continued in the ore body itself of the new discovery, and will be followed up sufficiently to obtain the dip of the ore stratum before further attempts are made to intersect it higher up the mine. The recent crisis at San Francisco has made no change in the arrangements at Eureka, and produced no inconvenience. We are informed that the company ran no risk as a consequence of the failures of the Bank of California, and have sustained no loss.

Referring to the adjoining property—the Eureka Consolidated—the Eureka Sentinel of August 12 says—

"Yesterday we paid another visit to the Eureka Consolidated, where we found a great change in the appearance of things in the 7th level since our visit last week. The drift from the first cross-cut is through to the winze, furnishing an opening to the main body of ore, and enabling us to ascertain the extent of the cave at that level, which is but a trifle compared with what we had supposed it to be before access was had to the works in the rear. The extent of the cave ground does not exceed 30 ft. east and west, by about 15 or 20 north and south. The work of running through the cave ground in the main drift is but a matter of a few days, when double the facilities for the extraction of ore will be rendered available. The removal of the debris in the chamber between the 6th and 7th levels has brought to view another large body of ore which heretofore had not been discovered. The development was made by the falling of a large body of earth from the top of the chamber. There was never so much ore in sight since the discovery of the mine, nor the prospects for a profitable return so favourable as at present. This assertion is based upon our own personal observations, and we know what we speak."

Eberhardt and Aurora, 8½ to 8¾; the run for August is expected to be more satisfactory than any hitherto made. Emma, 1½ to 1¾; a motion was heard before Vice-Chancellor Bacon, on Tuesday, for the production of certain documents in the possession of the company, in order that the plaintiff (Mr. Macdonough) might examine and make copies of them. The Vice-Chancellor ordered that the papers should be at the disposal of the plaintiff from Sept. 13 to the end of the month, the company to be then at liberty to send the documents to America.

Tecoma, ¾ to 1; the result of five assays of the ore taken from the lower adit show an average value for silver of a little over \$80 per ton of ore, and that the 10 tons obtained merely in driving the adit should, therefore, very nearly pay the costs incurred. A speedy development of the vein is considered by the board a matter of the first moment, and the superintendent has instructions to push it on as rapidly as possible. It is desirable that the company should be enabled to take the utmost advantage of its present position and prospects, and the board impressed upon the shareholders the importance of lending their best assistance. It is with some confidence believed that the company's property with patience and a little more pecuniary assistance, will at no distant date make some fair compensation for all the anxiety it has hitherto caused the shareholders. The latest advices state that the veins and pockets of ore which are now being worked will be found to connect and lead to the great vein or lode for which the lower adit is being driven.

There has been a fair business transacted in the shares of the various Hydraulic or Gold Washing Companies on the Stock Exchange. Sweetland Creek 3½ to 3¾; a dividend of 2s. per share has been declared, payable on Sept. 25. The washing is proceeding with the usual regularity. Shares are enquired for. Blue Tent, 4½ to 5; the ditch was making satisfactory progress, and will soon be completed at present rate. Washing was practically over. The shares are steady at quotations, though but little business is recorded. Birdseye Creek, 1½ to 2; the late clean-up was much better than the last one or two. The agent hoped to continue washing to the end of August, and anticipated a satisfactory clean-up for the close of the season. Cedar Creek, ¾ to 1; these shares have found buyers at present quotations. The washing was nearly over for the season, but the tunnelling would be continued, as but little water was required for the drill. Oregon, 4 to 4½; an exceedingly satisfactory telegram to hand—Many hands are employed; 57 ft. of the tunnel and a quarter of a mile of the ditch are completed. They expect to finish the whole by the end of November. The yield of gold by pan process is fully equal to all that has been reported.

There has been only a limited business in Foreign Gold Quartz shares; and last week's quotations are almost without variation. St. John del Rey, 400 to 410. The produce for 11 days, 2nd division of Aug., is 18,750 oits., value 7265s.; yield 10-2 oits. per ton. All is reported going on well at the mine. Don Pedro, ½ to 1. Port Phillip, ½ to ¾. Chontales, 9-16ths to 11-16ths. Javali, ½ to 1. Almada and Tiritio, ½ to ¾. Sierra Buttes, 1½ to 1¾. Plumas Eureka, 1½ to 1¾. London and California, ¾ to 1. Independence, 2 to 2½. Frontino and Bolivia, ½ to 1.

Cape Copper, 34 to 35; the returns for the month were 860 tons of 20 per cent. ore from Ookiep, and 45 tons of 27 per cent. from Spectakel; 620 tons have been put forward for sale on Sept. 14. Rio Tinto, 7½ to 8. Seven Per Cent. Mortgage Bonds, 16½ to 17; notice has been given that the scrip about to be delivered by the Council of Foreign Bondholders bears two interest coupons, and that due July 1, 1875, must be left at the office of the Rio Tinto Com-

Notices to Correspondents.

*. Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

THE FOREST OF DEAN.—Perhaps your local correspondent or some of your readers would kindly answer the following questions relative to the Forest of Dean:—1. In 1838 an index map was published of this Forest, and also sixteen maps on a large scale; John Wode, of High Holborn, was the publisher. Has there been any subsequent survey of the Forest, and where can these maps be purchased?—2. What is the quality of the coal in the Whittington, Coleford, High Delf, and Trenchard veins? What is the chemical analysis of these seams?—3. The name of any moderate sized work relative to the coal field of the Forest of Dean, and the publisher's name.—W. F.: *Inverkeithing, Sept. 9.*

THE BEERLSTON BURROWS.—Being an old resident in the neighbourhood of Beerston, and one interested in the prosperity of mining, may I be permitted, through the medium of the Journal, to enquire upon what basis Dr. Emmens founds the statement that the burrows from the abandoned mines of this parish contain something like 103,000 tons of stuff that will yield from 8 to 10 ounces of silver per ton?—INDEX.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country bookellers without the Supplementary Sheet. Subscribers who are obliged by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

Received.—"W. T."—"M. W."—"Mr. Bredemeyer's letter on the Camp Floyd Quick-silver Mines appeared in the Supplement to the Journal of June 26—"A Shareholder" (Wigginton Hall Colliery Company—"An Old Agent"—"J. W. P."—"Shareholder" (Roman Gravel)—"O. E.": Yes; send the particulars—"Shareholder" (Van Consoles): Write to the office—"Shareholder" (North Busy)—"Cymro"—"Dowser" (Callington).

IMPORTANT NOTICE.—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the *Mining Journal* to many countries will be reduced to one fourth. Henceforth the subscription will be 12. 10s. 4d. per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxembourg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Servia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 12. 10s. (39 frs.).

AVIS IMPORTANT.—AUX ABONNÉS ÉTRANGERS DU "MINING JOURNAL."—A cause de la nouvelle CONVENTION POSTALE il y avait, à partir du 1^{er} Juillet 1875, une grande diminution du prix de l'abonnement du *Mining Journal* pour bien des pays dont le taux des postes était jusqu'à bien élevé. À partir du 1^{er} Juillet le prix de l'abonnement est de 39 frs., le port compris, pour l'Autriche, Belgique, France, Danemark et ses dépendances, Roumanie, Russie, Serbie, Suède, la Suisse, la Turquie, l'Afrique septentrionale, etc. Le montant, si l'on le veut, sera touché à domicile, la fin de l'année. L'abonnement continuera sauf avis contraire.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, SEPTEMBER 11, 1875.

COAL AND IRON—OUR INCREASING TRADE IN THEM.

Whatever the advantages of the superior metals, and more especially the precious metals, there are no products of the mines comparable in their importance to coal and iron. They are not only as "good as gold," but a great deal better. If gold perished we could certainly get on very well without it, and the same may be said of silver, but without coal and iron where should we be? No doubt in a very early age flints and copper served the purposes of chisels and hammers, and some other tools and instruments, but, while great undertakings prevailed in "the copper age," the variety of purposes for which iron is now used could not be subserved without it. Iron could be well prepared for all its purposes by charcoal, and there are instances, as in Ireland and in Russia, in which coal could have been obtained, but the use of charcoal was persisted in as long as it was procurable.

The production of coal is now very general in England, except in the metropolitan and some of the southern counties; iron exists and is mined in Cornwall, where, according to geological evidence, there is no coal—a most unusual circumstance, for where the one is providentially the other is there to help it, and we know that Sir Christopher Wren obtained from Sussex the iron for the manufacture of the rails round St. Paul's, but we have lost all clue to the place of the deposits, and so far as can be ascertained Sussex produces neither iron nor coal now. The greatest coasting trade in coal is from the Tyne, and it is also a large export *entrepôt*, but rather more is exported from South Wales, as the quality produced better serves shipping, furnaces, locomotives, steam-engines, &c. The coasting coal trade of South Wales is, however, insignificant compared with that of the Tyne. "The cross Channel" coal business is transacted from the North-West of England, Whitehaven and Wigan yielding the supplies. The Wigan coal is sent by rail to Liverpool and Fleetwood, and thence embarked for Dublin and the North-East and South-East of Ireland, and some is sent from the Clyde for Belfast, Newry, Londonderry, and Sligo. Vast quantities of coal are sent by sea and land to the metropolis, and thence by sea and land again distributed to the metropolitan counties—Sussex, Hampshire, Buckinghamshire, the East of England, and the Channel Islands. This constitutes a commerce of great value, gives employment to numbers of labouring men, and affords subsistence to large numbers also of middlemen or dealers, independent of the vast demand for every conceivable purpose of London itself.

Our foreign commerce in coal has no import item, although "Try the Belgian Coal" is placarded on all the walls of London. It is a ruse to sell English coal under the impression that the novelty of the name would go for something. It has even been regretted that at least one cargo of French coal entered the Tyne, and that coals were literally "sent to Newcastle." The export coal trade reveals the following. The declared value for the month of August of coal, coke, cinders, and patent fuel was 992,642. In August, 1874, it was 1,171,128, a considerable falling off. But this did not arise from less business but from lower prices, because the quantities exported last month were 1,534,826 tons whereas that month twelve-month the quantity was only 1,436,421 tons. Similar results will come out from a comparison with August, 1873, when 425,000 tons of coal less were exported than last month. Taking the eight months of this year into account the money value of our exports was 6,373,195, a large falling off from the corresponding period of last year when it was 8,072,223, and in the first eight months of 1873 8,750,000, but here again a vast deal more business was done for less money, the comparative quantities for the three periods being 9,277,298 tons, 8,910,616 tons, and 8,309,571 tons. It is not by any means certain that our miners and coal owners have made less profit by sending away larger quantities for less money, because their expenses have been signally reduced; and if the colliers have had less pay per ton taken out they have had more work, and spent their money more creditably.

It is astonishing the wide area over which our coal exports extend—in fact, to the whole civilised world. It might occur that we sent the comforting fuel mainly to the cold regions of the globe, but it is not so; the inhabitants of the torrid zone have been good customers—all the South American countries beneath the tropics, British India, Egypt, Turkey, and Italy have sought our coal; they wanted it not to keep themselves warm, but to move their locomotives, work their steam-engines, &c. Hence large quantities of anthracite—especially from Wales—have been exported. Our best customers were those who have plenty of coal of their own, but for various reasons do not work it. France and Germany notably illustrate this. We exported to France last month 250,000 tons, greatly more than for some years, and during the two-thirds of this year which has transpired 1,750,000 tons. To Germany we sent in the month 277,000 tons, and in the eight months 1,419,000 tons (round numbers). British India took this year 210,000 tons. Our commerce in coal is obviously a great one.

Our trade in iron presents the following features:—The value of

imports were in August—bar, 152,252; manufactured, 148,348; unwrought steel, 6130. During the eight months of this year the value was—bar, 817,805; manufactured, 922,584; wrought steel, 57,493. These figures, both for the longer and shorter period, are considerably more than usual. We do not, however, use up all this iron, we export some of it again. During the last eight months the value of our exports of iron was—bar, 286,120; steel unwrought, 32,728. The month showed less than its proportion of those imports. Our commerce in this direction is decidedly increasing, our "re-exports" of iron and steel becoming larger from year to year. Our exports of British iron for August were of the value of 2,385,000 (still giving round numbers); this was some falling off from August, 1874, and rather a heavy one from the August before that, but the quantities last month were larger than in either of the others. During two-thirds of this year run out the value was 17,750,000, against over 21,000,000, in the corresponding period last year, but the quantity this year was just 40,000 tons more than that. In the first eight months of 1873 the value of British iron exported was enormous, amounting to nearly 25,750,000, 8,000,000 more than in the same space of time this year, but the quantity in that great year of high prices was nearly 7000 tons less, comparing the equal periods.

It would be impossible unless in an article devoted to iron exclusively to give the details of the different quantities, our immediate purpose being to show our operations in one view of what may be called the twin metal and mineral. There is no important change in the destination to which the metal is sent. The United States is our best customer for steel, and for old iron for re-manufacture, India for wrought and manufactured. The United States for tin-plates (so-called). Australia for hoops, sheets, plates, and boiler armour. British North America, Australia, and Russia for railroad. India for bar, angles, bolt, and rod. Pig-iron is bought most by Germany and Holland. It cannot fail to be a satisfaction to learn from indisputably authoritative sources that our trade in coal and iron is not falling off but absolutely increasing, although we are unable to obtain the inflated prices of recent years.

LIMITED COLLIERY COMPANIES.

In the early part of 1873, when the price of coal was more than double what it is at the present time, and when there was a positive mania for investing in collieries, we took occasion to warn the public against speculating in such property without the strictest investigation, owing to the fabulous sums that were being given for comparatively poor concerns. Promoters of companies who bought at a moderate figure and sold at an astonishingly high one, of course made fortunes quickly, but it was very different when the collieries were transferred to limited companies, for, as we stated, the large profits made by coalowners and the high wages paid to miners could only be of limited duration. On the occasion referred to we gave it as our opinion, based on most reliable data, that the price of coal in the course of a couple of years or so would come down as low as what it was in 1871. We thus endeavoured, as far as lay in our power, to prevent ruin from overtaking many a household, but our efforts were not sufficiently deterrent, for despite many warnings people appeared to believe that coal would go on increasing in price, and that the only true road to the rapid amassing of wealth was being connected with coal mines. They appear to have overlooked the fact that the very course they were adopting was the sure means of bringing down coal to something like what we may call its normal condition, or to what it was before the extraordinary rise in price took place, so that the sums paid for collieries were not likely to result to the advantage of the shareholders. That our views were substantially correct is abundantly shown by the many limited coal companies that of late have failed and gone into liquidation, of others that are still struggling against their inevitable fate, and of a good many more who have great difficulty in paying a small dividend. It is true that fortunes have been made by adventurers who starting without a stiver of capital of their own have had placed to their credit the capital of others. But nothing is more astonishing than the ease with which people allowed themselves to be victimised, and the reliance they placed on the statements which appeared in well-devised prospectuses.

A strong proof of this we have in the case of the Silkstone Fall Colliery Company, the history of which was recently given by the Chairman, and the last scene in connection with it only closed on Thursday with the sale of the remaining plant, for the purpose of paying the debts as far as possible. The company was formed at the close of 1871, and the colliery was purchased on its behalf for 30,000, of which 18,000 was to be paid in cash, and the remainder in fully paid-up shares. The directors, including the Chairman, had all their shares given to them to qualify for the directorate. The public, however, did not take kindly to the concern, and to give them a powerful stimulus a dividend of 25 per cent. was declared, although the concern was scarcely paying. The device took, and shares were soon taken up, and the promoters, who had netted nearly 20,000, were able to sell their shares at a premium of 12 each. The capital was 50,000, and it was clearly shown in the prospectus that the total profits, after allowing for sinking fund and all expenses, would be from coal, coke, and fire-clay 9400 a year, "or a dividend on the paid-up capital of about 24 per cent. per annum." But there were other advantages in connection with the valuable property. At the rate of working the coal was to be worked out in nine years, at the end of which, "from the operation of the sinking fund, in addition to the dividends paid to the shareholders, the company will be in possession of the whole original purchase-money, which they will be free to employ in working other properties, including a valuable bed of ironstone." The end, however, has now come in exactly four years, and without dividends the whole of the 50,000 has been lost, and the directors are liable for a considerable sum.

The history of Silkstone Fall is not an isolated one, for there are many others that have been placed in exactly the same position, and there are even at the present time several who are going as fast as they can through the same process, and to the same goal. Only a few days ago a colliery proprietor in Derbyshire informed us that he sold two pits working a thin seam of coal during the mania season for 14,000, and the person who bought them re-sold again to a limited company for 40,000. At a recent meeting of a Derbyshire company much dissatisfaction was expressed at the condition and prospects of the company, and an indignant shareholder remarked that he had before his eyes the fate of the Silkstone Fall Company, for the half-year's working only showed a profit of little more than 2000, whilst from the prospectus they were assured of a yearly profit of 14,000, which, after deducting 2000 for redemption of capital, left a sum sufficient to pay a dividend equal to 24 per cent. on a capital of 50,000. But the company alluded to held out even a stronger bait than this, for in the prospectus it was stated it was intended to erect blast-furnaces for the smelting of the ironstone found in connection with the coal, "which it was confidently expected would add at least 20,000 per annum to the income of the company on a further outlay of 50,000."

Such are the ways and means that have been adopted for inveigling persons to take shares in companies that have been entirely got up for the benefit of two or three individuals. For all such concerns the year has been a most unfortunate one, for our vaticinations with respect to the price of coal have been realised to the full, and there is not the slightest likelihood of its permanently rising. On the contrary, from the great number of new collieries now in course of opening out it is evident that when all are at work prices must of necessity come down, for there will be a great deal more coal raised than there will be markets for. Old-established companies will go on as usual, seeing that they were not purchased at fancy or sensational prices, but in addition to the many comparatively new ones that were taken over when coal was selling at 12 per ton instead of 9s. or 10s., as at present, it will be very different. Many of those have already fallen beyond the power of redemption, and it will be well for the shareholders in not a few others if they at once realise their actual position, and have a careful survey made of the value of the property as well as of their prospects. By so doing they may save much ill-feeling and loss in the future, and so make the best of what they have left to them. The fate of the Silk-

stone Fall Colliery Company, as well as of the many others that we have seen recently placed in liquidation, should point a moral to investors or capitalists, showing them that money is often easier lost than earned, and that speculations in colliery property require great care, as well as honest and reliable information.

COMBINATIONS OF CAPITAL AND OF LABOUR.

A most elaborate and highly interesting report of the Committee on Combinations of Capital and of Labour was read by Professor LEONE LEVI at the meeting of the British Association a few days since, and was followed by several addresses by gentlemen who had evidently paid considerable attention to the subject. The question is one which we have specially noticed quite recently in consequence of the efforts being made to consolidate in particular the various mining bodies scattered throughout the kingdom into one powerful confederation, and the action taken in consequence by the mine owners to meet the threatened attack upon their rights by those they employ. It has been said that the proposed federation of the workmen is in no way antagonistic to capitalists who are extensive employers of labour, but the men themselves freely admit that the object is to keep wages up. To some extent this has been admitted by Mr. HALLIDAY at the recent meeting of the Amalgamated Association—which, by the way, has been entirely swallowed up by the new combination—for he remarked that the Federation would be able to exercise great influence in the event of a struggle between workmen and their masters, and be of great advantage in other ways. Therefore, it is evident that the object of the new combination is to obtain an increased power over employers and their capital, for we find the president, Mr. MACDONALD, at a recent gathering, stating that masters were like the legislators of the country, they were just what the people allowed them to be, and what they thought fit to make them. The plain inference to be drawn from such remarks is clear and definite, despite any attempt at qualification. Capital has had too much power, and a large portion of that power must now be taken from them and transferred to the leaders of the men, and this change is to be effected by a federation powerful in numbers only. Now, we cannot refrain from saying that in our opinion too much power has been handed over by the working miners to those who never work, but become capitalists, and enjoy a life of luxurious ease and pleasure at the expense of the toilers. It may be necessary that a certain amount of power should be given to appointed or self-elected leaders, but even that should be limited, for we know that it is not often judiciously exercised in the interests of those from whom it is obtained. We know enough, too, of the past to assert that it has not been so used, for in proof of our assertion we need only allude to several strikes which have taken place in our mining districts during the present year, more particularly the recent one in South Wales, which led to such lamentable results, the miners and their families having suffered the greatest privation and suffering, although connected with what was believed to be a very powerful Union. But this great combination or federation of labour has evoked a feeling of insecurity on the part of the employers of labour, and they are now federating together for the purpose of maintaining their rights, and combatting any action which may be taken by the men to endeavour to secure by the force of numbers what they would not think of asking for individually. It is evident that the result of these combinations will be to lessen the confidence which has hitherto subsisted between masters and men, and make them more antagonistic than they have been.

In the report read at the British Association it is stated that disagreements between employers and employed were often produced on the subject of wages by the fact that all the elements of the case were not within the cognizance of both parties, so that making a demand for an increase of wages or in opposing a fall the men were groping in the dark as to all the circumstances relating to the subject. Admitting this to be correct, the question then arises as to who is to be considered responsible for ignorance of such essential elements as relate to the wages of workmen. The men have leaders who are well paid to advise them, and whose duty it is to supply such information, seeing that there is no difficulty in obtaining it, for the actual selling or market price of fuel, iron, steel, or, indeed, of almost any other commodity, is easily ascertained, whilst there is very little difficulty in calculating the cost of production. The committee suggest that were employers who were not in the dark in such matters to make known to their own workmen the ground of any action they propose taking with respect to wages before their resolve was carried into execution many disputes might be avoided, and much of the jealousy existing between the two sides would be removed. To this we cannot altogether agree, for we remember that on several occasions such has been done, more particularly in connection with the coal and iron trades, but it had not the effect of convincing the men or their leaders, seeing it was not to their interest to take for facts the statements of their employers.

It was stated in the report to which we have alluded to that employers were seldom found to take the initiative in allowing a rise of wages when the state of the market permitted it, as they were in the case of a fall, so as to spontaneously offer what they must ultimately know they would be compelled to grant. In answer to this, we may say that experience has shown that the workmen know full well the moment when trade is in such an improved state, or when large orders are in hand, that they can claim an advance with almost a certainty of its being conceded, so that they very rarely indeed give their employers time to make any such proposal were they ever so strongly inclined to do so. As a rule, too, they know full well when trade is in a depressed state. Colliers in particular in many districts have been acquainted with the fact that during the last few months mines were positively being worked without a profit sufficient to pay ordinary interest on capital, yet no one ever heard of them proposing to their employers that their wages should be reduced, so as to meet the change which has taken place in the price of coal. But the one proposal would be equally as just and considerate as the other.

The question of a uniform rate of wages is one that has been often discussed by us, and we have held that it is most unfair, and such is the opinion of Prof. LEONE LEVI, and others who have paid any attention to the subject. Trades Unions have always endeavoured to secure the same rate of remuneration for the ordinary as for the skilled workmen in any trade. This gives an advantage to the unskilled and slow workman most unfair, and to which he is no way entitled, and so keeps down the skilled hand to the level of the mediocre one, so that there is no scope allowed for admitted ability. We, therefore, agree with the committee that uniformity of wages, however convenient it may be, is neither just nor practicable, whilst any effort to compel uniformity of earning of any number of individuals must "prove fallacious and wrong as an illegitimate interference with the rights of industry."

How far combination can affect wages permanently or temporarily was noticed in the report, and the opinion of the committee was that they could not do so, as the conditions of trade had everything to do with the rise or fall of wages. Combinations for such a purpose, however, though they might accelerate the action of economic laws, produced a state of irritation and discontent which often interfered with the progress of production. In connection, it may be said, with the same portion of the report, it is followed up by an enquiry as to whether an artificial restriction of labour or capital can under ordinary circumstances be economically right or beneficial. It is admitted that limiting production with a view to maintaining prices or wages would be injurious, and could not be continued. Yet it is stated in the report that it might be a point for consideration whether, under certain circumstances, it would not be better for either capital or labour to submit to the evil of restriction "in order to avoid a still greater evil of producing at a loss, or working at a rate of wages not sufficiently remunerative." We know of nothing that can justify restriction of production, for where attempted it can never be beneficial. It might do for a short time with regard to goods the entire supply of which English producers have in their own hands, but the increased price paid by the limitation of production would soon induce other capitalists to go into the same business, and so, in all probability, bring prices down lower than they had been before. Any attempt, therefore, to enhance

unduly the value of any commodity either to increase profits or wages would end in the loss of trade by customers going into other markets where they could obtain similar goods on better terms. Restriction of production so commenced would also ultimately result in producers being forced to increase restrictions and lower wages, from the loss of custom and decreased prices, owing to competition. High prices and high wages have been not altogether a blessing to the country. If we take the coal and iron trades we find that in 1872 and 1873 prices and wages were higher than ever they were before, but what has been the consequence? The business in both has greatly fallen off, and prices have come down to a point that barely leaves a mere fringe of profit—if it does that. The coal trade was something really extraordinary in the years named, so that a greater number of capitalists went into it, and new collieries were commenced in every mining district in the kingdom, so that it was computed that within five years our productive power would be increased considerably more than 20 per cent. It is, however, evident that the time is most unhappily chosen for the formation of trade federations for the purpose of keeping wages up to a higher point than can be afforded by those who have to pay them. Looking at the position of affairs at home and abroad, we should say what is most required now is an honest confederation of capital combined with labour, for the purpose of devising the best means for not only increasing our trade, which is the reverse of good at the present time, but for beating all foreign competitors in the markets of the world, not only with respect to the quality of our products, but as to their cheapness as well. Such a combination could not fail to be of permanent advantage to both workmen and employers, instead of federations where the two classes must meet in declared opposition, if not in decided enmity. We, therefore, most heartily hope that the report of the committee of the British Association on capital and labour will be the means of drawing closer together masters and men, for the interests of both.

FURTHER COAL DISCOVERIES IN STAFFORDSHIRE.

Instances are forthcoming nearly every week which should strengthen the conviction of the national mind that practically speaking there will be coal for all ages, though not perhaps for all men. There have been some efforts to find coal which have not been invariably successful, but the proportion of unsuccessful researches of this class have diminished with the advance of time. The knowledge of geology has extended, and the science of mining engineering has made progress, and when men have been led by these two lights they have seldom failed. Quite new colliery districts will soon be yielding their fuel for the use, not alone of every one needing fire and light in the daily requirements of life, but likewise of the smelters, the manufacturers, and the steam users. But modern discoveries at the same time that they reveal sources of supply in new localities demonstrate also that old coal fields extend over faults previously for long years supposed to rigidly define their limits. We last week pointed out that the county of Lincoln would soon be furnishing fossil fuel to the consumers of it, and the news before forthcoming as to the finding of considerable areas of valuable Thick coal under the Permians in the old district of South Staffordshire is supplemented by the intelligence that coal has been struck beyond the boundaries of what have heretofore been believed to define the Cannock Chase district—a coal-yielding district which itself is merely of very recent date.

For some time past the Diamond Boring Company have been at work piercing through the shifting pebble beds of that portion of the Chase situated between Cannock and Huntington, and owned by Lord HATHERTON. The property adjoins that of the West Cannock Colliery Company, and though within a mile of their shafts yet was deemed to be barren ground. It lies to the east of the fault running north and south under the Huntington belt. About 1000 acres of this land have been taken by a limited proprietary, known as the Cannock and Huntington Colliery Company. It is believed that the Huntington belt throws down the coal measures of the western side of the estate about 200 yards, but the company have been boring at a point where the surface is 125 ft. lower than that of the West Cannock pits. On the west the property is bounded by another fault, which again throws down to the west. There is no reason to conclude that other faults are likely to be met with. It had been anticipated that as the depth to the deep coal at the West Cannock shaft is 299 yards, that upon the Cannock and Huntington estate, if coal should be at all found, the deep coal point there lay at from 400 to 450 yards, according to the extent of the down-throw. The discovery now made, however, proves that not only is there coal upon the estate, but that deep coal will be found much nearer the surface than had been expected. The Diamond Boring Company have at a depth of 435 ft. pierced a bed of coal 5 ft. thick. What is to be hereafter found is to be inferred from the circumstance that at Rednesford, near at hand, there are 10 workable seams of coal of a total thickness of nearly 60 ft., at West Cannock there are the same number of seams, of an aggregate thickness of about 50 ft., and that there are besides at both places several smaller seams from 1 to 3 ft. thick. The existence of this 5-ft. seam carries the Cannock coal field another step towards Shropshire, and it directly points to the probability of coal being found over a vast tract of the untried land to the north-east of Wolverhampton. The importance of this discovery is very great to the South Staffordshire and Shropshire district, and it comes at a time when such a discovery in that direction was beginning to be sorely needed. It cannot but result that a busy and prosperous time is in store for that end of the county of Stafford.

Happily, whilst this is occurring in the direction of Shropshire, the works of the Sandwell Park Colliery Company, which have developed the Thick coal throughout a wide area beneath the Permian formation, on the estate of the Earl of Dartmouth at West Bromwich, and therefore near to the Warwickshire coal field, are attended with evidences increasingly assuring as the works become more extended. The report presented at the recent annual meeting of the Sandwell Park Colliery by Mr. JOHNSON, the engineer, was given in substance in our Staffordshire report, inserted in last week's *Mining Journal*. Therein it was pointed out that an exploring gate-road had been driven in the Thick coal from No. 1 pit in a northerly direction for a distance of about 600 yards, nearly on a level, and throughout nearly the whole of that distance no fault of any moment had been met with. The gate-road runs through the centre of the Sandwell estate, which is some 1700 acres in extent, and the thickness of the coal along the gate-road varies from 7 to 9 yards, and is of excellent quality. A bore-hole put up at the termination of the gate-road the day before the meeting proved the coal there to be 8 yards 2 ft. 6 in. thick. The significance of the revelations made by this gate-road will appear when it is remembered that at the same time that the whole of the Sandwell Colliery sinkings are over the fault which was supposed to form the eastern boundary of the South Staffordshire coal field, sinkings made at Copy Hall Colliery, not far from Aldridge, which is near the north-eastern end of the coal field, and some miles away from Sandwell Park, have resulted in Thick coal being proved also in the Permian rocks.

Throughout the whole of the area, even between the Copy Hall and the Sandwell Park collieries, there is now but little doubt that the valuable Thick coal of South Staffordshire will be found at a workable depth, for there are no surface indications of any faults or disturbances. As was to have been expected, capitalists have quickly come forward to develop mineral areas of so great promise. Some 1500 acres, known as the Perry Hall estate, have been leased to a private company by the Hon. A. C. G. CATHORPE, who, with Lord CATHORPE, is to be a director. And the Hampstead Colliery Company is sinking upon another portion, which consists of a surface area of 494 acres, and a mineral area of 520, for which 100,000 is to be given. The engineers estimate that the depth at which the Hampstead people will find coal will be from 550 to 600 yards. The Sandwell Park estate comes up in a north-easterly direction against the south-western edge of the Hampstead estate.

The mining, iron-making, and manufacturing interests of South Staffordshire and Birmingham are to be congratulated upon the extraordinary vitality of their combined districts; for not only on the Cannock Chase and Shropshire side is there plenty of scope for profitable enterprise, but likewise upon the Birmingham edge of

the county there is equal ground for cheerful confidence—all occasioned by successful mining enterprise in areas at one time believed to be utterly devoid of fuel. Nor must it be forgotten that whilst all this is happening steady progress is being made by the Mines Drainage Commissioners towards the releasing of millions of tons of coal and ironstones, which for many years have been altogether submerged, a source of constant expense to its owners, and of grave danger to the lives of workpeople in adjoining mines.

IRON AND STEEL INSTITUTE.—The progress which this useful institution continues to make must be gratifying to all, no matter what particular branch of our national industries they may be connected with, since the knowledge and information elicited at the periodical meetings of the members, one of which is reported in another column of this day's *Journal*, cannot but tend to facilitate the manufacture of the best quality of metal at the lowest possible price, whilst it is a well recognised fact that where good iron and steel are obtainable cheaply, especially when the cost of fuel is correspondingly low, there industry and commerce most largely prosper. The secretary, Mr. Jones, had the satisfaction of stating that the number of members is now about 900, and the long list of new members and candidates for membership announced gives abundant proof that the interest of those connected with the trades represented continues unabated. From its earliest inception the Iron and Steel Institute has enjoyed the utmost good fortune; its four first presidents have been men of the highest position in the iron trade—the Duke of Devonshire, Henry Bessemer, Isaac Lowthian Bell, and Mr. Menelaus—and it includes among its members dozens of others scarcely less prominent as metallurgists. The great invention of Bessemer will cause his name to be remembered throughout all time, and the metallurgical researches of Bell are too well known to need comment, whilst to Menelaus may really be attributed the development of the system of mechanical puddling, for it was he who first practically tested the principle on a large scale, and pointed out the defects in such a manner as to enable Danks and others to remove them. The papers brought forward at the Manchester meeting, although for the most part less closely connected with iron metalurgy, included one by Mr. Isaac Lowthian Bell, M.P., upon the relative advantages of calcined and uncalcined limestone in the blast-furnace, which will no doubt give rise to much discussion. Opinions appear to be divided upon the question, but in the result it seems that where the furnace is properly constructed and of ample height no good result follows from calcination, though when a furnace is ill constructed and overburdened some benefit results. The reception of the Institute at Manchester was very hospitable, and, probably, no more successful meeting has been held.

AMERICAN STEEL GOODS IN ENGLAND.—English edge tool makers in particular are aware of the success with which certain of their business rivals in America have hustled them in many of our home and foreign markets. So large, however, is the demand at present for good edge tools of almost every description that there are few edge tool firms in the United Kingdom who have not got plenty of orders upon their books. The English article is not, therefore, out of use, but there is a perceptible increase in the favour in which handy and thoroughly excellent tools are held both at home and abroad. And this is being encouraged by the growing facilities for manufacturing steel, both shear and cast. Sensible of this, certain American firms are pushing their opportunity. Hence it comes about that American forks, shovels, and axes are to be had wherever edge tools are offered in this country. But it would seem that the Americans believe that they can compete with us much more successfully by having branch establishments to manufacture their specialties in this country rather than by shipping their product from the other side. A firm of cast-steel shovel makers at Pittsburgh (Messrs. Hussey, Binns, and Co.) who have recently brought out a shovel in which the straps, though of iron, are compacted with the steel during the process of casting, and who are making at a very low figure, and with very little manual labour, shovels that are getting very rapidly into use throughout the States, are now, through a representative who has recently come over from Pittsburgh to England, making enquiries which will regulate their action, and determine them whether they will themselves begin to make in this country, or whether they will offer their process to English firms, or to an English company. If American edge tool makers should begin to produce here goods that are already running English makers hard, then it is to be inferred that their example will be followed by other Transatlantic hardware manufacturers. If, in such an event, the English firms will keep as well employed as they now are is another matter.

COAL AND IRON IN THE UNITED STATES.—The movement of coal over the Baltimore and Ohio Railroad in the year ending Sept. 30, 1874, amounted to 2,209,762 tons; this total included 431,134 tons required for the company's own supply. The aggregate movement of coal over the system in the year ending Sept. 30, 1873, was 1,778,628 tons. In the course of the year ending Sept. 30, 1874, the Baltimore and Ohio Railroad Company used 7946 tons of steel rails in repairing and constructing additional tracks on the main stem. American iron rails are quoted at the works at \$50 to \$53 currency. English rails have been quoted at New York at \$48 to \$50 gold. The production of anthracite coal in Pennsylvania to Aug. 7 this year was 10,013,446 tons, against 11,560,251 tons in the corresponding period of 1874, showing a decrease this year of 1,546,805 tons. The production of bituminous coal in Pennsylvania has presented a small increase this year.

COMPULSORY MINES DRAINAGE OPERATIONS.—The work of the South Staffordshire mines drainage scheme has been advanced another stage by the confirmation, on Tuesday, of the award of the arbitrators relating to the Tipton district. This progress was not made without opposition, but the opposition was not distinguished by such pertinacity as had previously been manifested, and in most instances was accepted by the Commissioners who sat as judges as in some degree well founded. Facts were adduced which showed how extremely expensive are the private pumping operations of certain of the colliery proprietors in that part of the kingdom. The first appellants against the award were the Patent Shaft and Axletree Company, who simplified their objections by dividing their property into three sections. In the first (80 acres in extent) they raise 369,986 gallons of water per day, at a cost on the coal of 10d. per ton; in the second—consisting of 180 acres—their diurnal pumping averages 803,000 gallons, and taxes every ton of coal with 1s. 2d.; and in the third (only about 125 acres) they bring to the surface nearly 600,000 gallons, and increase the cost of their coal by 2s. 6d. per ton. In accomplishing all this they had to employ seven pumping engines and two barrels, and in drawing the 600,000 gallons they drain mines which overpread an area of one mile. Earl Dudley, represented by his mining agent (Mr. Fisher Smith), desired exemptions from the rate for those of his mines which were above the water level, that the rate for those connected with the many powerful engines on his lordship's estate should be graduated, and that limestone should only be assessed at half the amount levied upon coal. As the Earl raises 32,000 tons of limestone a year the benefit which would be derived from a reduction of 1½d. per ton on such a quantity is self-evident. Messrs. Philip Williams and Sons were opposed to their firm being included in the award, mainly because of their isolated position, but because, also, they raise over 97,000 gallons of water per diem, at a yearly expense of between 6000l. and 7000l. The basis of the appeal of the executors of John Yardley was that 650l. was being annually spent in pumping, and the contention in support of the appeal of the Moorcroft Colliery Company was that upon only 55 acres they were raising nearly 800,000 gallons of water per day. Before they pronounced a judicial opinion the Commissioners invited the counsel who represented appellants to fully express themselves if they had anything to say upon the validity of the award. Though it was advanced by counsel that there was a wide distinction between arbitrators adjudicating upon an ordinary submission and arbitrators constituted under an Act of Parliament, yet legal authority upon the point could not be quoted, and the Chairman of the Commissioners said that the proposition was elementary, still all the authorities were plain blank against it. Next, it was maintained that the preliminaries necessary under the Act had not been complied with, and that the rate to be legal and just should have been graduated. As to the first contention, it was in part nullified by the evidence of the assistant surveyor to the arbitrators, and in part by the production of the report which the arbitrators framed before drafting any award, and which had guided the deliberations of the Commissioners. The decision of the Commissioners was a full reply to the second contention. They confirmed the rate as to the coal of Lord Dudley's pits, but reduced it on limestone from 3d. to 1½d. per ton; they lessened the rates of Messrs. Philip Williams and the Moorcroft Colliery Company, both to 2d. per ton; they exempted the Patent Shaft and Axletree Company, but confirmed the rate of the executors of Mr. Yardley. Matters having been thus far satisfactorily adjusted we may congratulate the mining interest in the Blaton and the Tipton districts upon their future prospects. Taxed only by minimum rate, colliery owners will be relieved of much of the water which now oppresses them in their daily work in both the localities named. It will have been noted that in confirming the awards with the modifications sanctioned, first as to the Blaton, and now as to the Tipton district, the Commissioners by their

decisions, like the arbitrators by their awards, aim not at rendering available the extensive tracts of mineral now altogether submerged, but at accomplishing work urgently needed to prevent an extension of the impediments already existing.

REPORT FROM CORNWALL.

Sept. 9.—We have been on the very verge of a furore in share dealing within the past few days, if indeed it may not be considered that in some instances, at any rate, the boundary was overstepped. Whatever good luck the future may have in store, let it not lead to undue excitement, which does, in the long run, good to no one. If only a little of the unwisdom which has been already manifested could have diverted into some healthy channel, for example, the preservation of St. Ives Consols—the existence of which, we are afraid, is in sad jeopardy, since sales of going concerns are very uncertain—what a benefit it would have been. But utility is not the direction that this kind of share traffic takes.

Practical men who have made enquiry into the operations under the Nascent process at Holmush and New Consols quite endorse the opinion expressed as to its success in last week's *Mining Journal*. From 8 tons to 9 tons of precipitate per month are now being made from ores that were previously thrown away, the price realised for the precipitate being about 70l. per ton. It is a well-known fact that in many of the abandoned copper mines of Cornwall large quantities of copper ores of a low percentage are discovered, but remain unworked, but with the extraction of this copper proved a commercial success. It is contemplated to re-work some of the mines that were abandoned about 50 years since, and, in addition to the raising of copper ores of the ordinary quality, to proceed, by the Nascent process, with the extraction of the copper contained in the poorer sections of the workings. There can be no doubt that with judicious management and an adequate capital many of the old mines will pay for re-working. It is cheering also to find that some of the newer copper mines are showing good results, and are coming to market with their ores. In some mines also that were formerly rich for copper, but have been chiefly worked for several years past for tin, the attention of the agents has been again directed to a renewed search for copper, and with considerable chances of success. It need not surprise anyone to hear of fresh discoveries of copper at any time, as the district to which we refer is noted for the richness of its copper ores. Cornwall and its special industry may, indeed, be depressed, but they are not easily to be put down. The rival that will perform that feat has yet to be discovered, Australia notwithstanding.

We were in hopes that before this time there would have been ample opportunity of judging of the merits of the Barrow borer which has been introduced at Dolcoath. It appears, however, that the old compressor, the one which was used some years ago, when Doering's borer was tried, is not powerful enough, and that one has had to be ordered from Messrs. Tangye.

No public collection of minerals in the West of England can at all compare in fulness or illustrative value and in included varieties with that of the Royal Geological Society of Cornwall, at Penzance. A guide thereto, preparatory to a fuller one hereafter, has been published. It is the work of Dr. Foster, F.G.S., and Mr. A. K. Barnett, F.G.S., the curator and assistant-curator of the institution, and contains just the very class of information required by visitors—a general survey of the contents of the museum, with special references to the rarer and finer specimens, in which the museum is remarkably rich. We need not say that the work, in such hands, has been thoroughly well done.

One of the poor fellows who suffered from the effects of the foul air in Great Wheel Lovell—Jenkins—has died, and an inquest has been held upon him. The jury returned what was in effect a verdict of "Accidental Death," believing that Capt. Prisk had done all in his power to clear the mine of the noxious atmosphere. According to Dr. Foster's view, however, two of the steps taken—the burning of furze and the flashing off of gunpowder—were calculated rather to make matters worse under the circumstances, though under other conditions they might have had the end desired. Technically, a breach of the law has been committed, but it is hardly likely that it will lead to further action.

It is much to be regretted that the adventurers in St. Ives Consols determined at their meeting, on Monday, to wind-up the concern, for although it is true that at present the mine is not remunerative all the heavy work has been done, and the prospects are such that, with the advance in the price of tin, which all very confidently look forward to, good profits may be expected. Less than 17,000l. has been expended upon the property altogether, and it was stated that, assuming the mine to be wound up at once, the total liabilities would be 5500l., and the assets but 1000l. less. As the halvans are the accumulation of about 60 years it was estimated that by stopping the mine and selling the machinery and materials there would be an available credit of at least 1500l., after paying off all liabilities. The immediate cause of the stoppage is the relinquishment by the trustees of the Earl of Lude's estate, who held 359 out of the 740 shares of which the mine consists, leaving but 381 to carry on the mine. This is no doubt gloomy, but as Mr. Bolitho has expressed his willingness to take 100 shares in the new company, the pursuer (Mr. Apin) and Capt. S. Williams have agreed to treble their present interest, there certainly seems to be no reason for stopping the mine. Surely a new company might be formed, with a capital of 10,000l., in shares of 10l. each, to purchase the property as a going concern for 7000l., which would provide for paying off the 5500l. existing liabilities, and leave the 1500l. for present adventures. As the new adventurers would have the 4500l. present assets the mine would really cost them but 2500l., much of which might be recovered by working over the halvans. These considerations, taken in connection with the fact that the report upon the mine is decidedly encouraging, leaves no doubt that the company might be re-constituted upon such favourable conditions as to give great promise of success. It may be hoped that by the date of the adjourned meeting the idea of stopping the mine will be abandoned.

WHEEL GRENVILLE has recently been inspected by Capt. Josiah Thomas, manager of Dolcoath Mine. Capt. Thomas in his report says that the chief point in the mine is the development of the great flat lode (or the South Condurow lode), which has been intersected at the 130, 140, 150, and 160 from the new shaft, and at the 130 from the north shaft, which is 90 fms. east from new shaft. Capt. Thomas speaks favourably of the lode at the various points opened upon, and in regard to the reserves he says that from the small amount of ground that has been opened on the lode, it is difficult to arrive at their value, but there is no reasonable doubt that when the lode is more fully developed large quantities of tin will be returned for many years to come. With regard to the machinery, Capt. Thomas says it is probable that more pumping and stamping power will eventually be required, but before this outlay is entered upon it would be prudent to see more of the lode. The stamping power, Capt. Thomas thinks, is sufficient for the present. As these opinions fully confirm those of the management of the mine, it must be satisfactory to the adventurers to have the judgment of their agents thus endorsed. These views, coming from such an authority as Captain Thomas, are also an effectual answer to the exaggerated statements that have lately been published as to the present inefficiency of the machinery at the mine.

TRADE OF THE TYNE AND WEAR.

Sept. 8.—The Coal Trade, on the whole, continues very dull; the demand for house and gas coal has improved a little, but only first-class coal finds a market that will produce prices at all remunerative. Manufacturing coal and all second-class coals are very plentiful, and consequently the prices received are very bad. The question of a further reduction in the prices of the miners continues to attract serious attention, and it is likely that some resolution will be arrived at soon by the masters on this ticklish question.

The Iron Trade continues to improve slowly; at Middlesbrough, on Tuesday, the attendance was smaller than usual, owing to the absence of many who are attending the meetings of the Iron and Steel Institute at Manchester. The return of the ironmasters' stocks for the North of England were posted and were read with interest. The make of pig metal during August, as compared with July, was reduced by 2329 tons, the whole make for the month being 166,241 tons. Of shipments to foreign ports there were 31,013 tons, whilst above 26,000 tons were shipped coastwise, chiefly to Scotland. Makers' stocks were reduced by 1153 tons, standing at the end of August at 99,479 tons. There are 113 furnaces in blast, and 43 out of blast; many of those out are not in a condition to be re-lighted. The general feeling in the market was stronger, and more money was asked for pig-iron, especially for foundry numbers. The quota-

tions were—No. 1, 57s. 6d.; No. 3, 47s. The manufactured iron trade is without change; it continues bad, and there is no improvement whatever in rates.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—A general meeting of members will be held on Saturday, when the secretary will read a "Memoir of the Life of the late Mr. Thomas Emerson Forster," written by Mr. G. C. Greenwell, manager of the Poynton Colliery, near Manchester. It appears that it has been arranged to have a meeting of the members in the Barneley district, they having accepted the invitation of the Council of the Midland Institute of Mining, Civil, and Mechanical Engineers. Details of the arrangements for the meeting will be given on Saturday.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Sept. 9.—The Coal Trade of Derbyshire is slightly better than it has been, and a very fair business done with the metropolis, where the price of household qualities has recently advanced about 1s. per ton. A considerable number of miners, however, are still on strike in the vicinity of the Butterley Company's pit, against a proposed reduction of wages. The company, which is composed of two families, are the most extensive colliery owners in the country, and have always treated their workpeople with marked liberality; but this appears to make but little difference, for when trade was bad and prices low, the men refused to make any concession whatever. Of course, the miners in other districts support those who are out, and, although the latter are not connected with the Union, they have applied for support to the new confederation, of which Mr. Macdonald has been installed the Chairman; and they are likely, it appears, to obtain substantial aid. The opening of that portion of the new line of the Great Northern Railway between Pinxton and Nottingham opens out a considerable extent of minerals that has hitherto been entirely in the hands of the Midland Company, and it will be interesting to note the result. It is not likely to affect the position of the Midland to any appreciable extent, for that company has been most liberal towards the colliery owners on the entire route from Sheffield to Chesterfield, and along the whole of the Erewash Valley, by giving plenty of siding accommodation, as well as making branches from the main line to the various collieries in Derbyshire. It can, therefore, claim the undivided support of the coalowners for what it has actually done for them. Lead mining has undergone no change of late, the production being regular, and about an average.

There is a little more doing in one or two branches of the Sheffield trade, but there are several that are only indifferently off for orders. The heavy armour-plate mills have been kept going very well, and the same may be said with respect to the Bessemer rail mills in the town and neighbourhood. Foundry material continues in very good request, especially stoves, kitchen-ranges, palisades, and ornamental castings. The engine-works, although fully employed, are not so active as they have been. Some descriptions of cutlery are in better demand, but cast-steel by itself is quieter. At the collieries in South Yorkshire trade has improved a little, and prices of both house and steam coal are firm. The wages question has been abandoned, for at the meeting of colliery owners, held at Sheffield on Monday, it was resolved that the proposed reduction of 10 per cent. should not be enforced. This, of course, makes the miners quite jubilant, and it certainly is to be regretted that the proposal was made at all, for it gives the men the opportunity of questioning the unanimity of the members of the Masters' Association, and in the future may be referred to as showing that a bold front can deter masters from attempting any reduction of wages, even when the state of trade really warranted such.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Sept. 10.—The Iron Trade of South Staffordshire is still in an unsettled state, owing to the continued wages agitation, a section of the finished ironworkers having refused to accept the liberal concession which was offered by leading representatives of the trade at Birmingham last Thursday. In the opinion of most people the concession was more than the condition of the trade properly justified, and the persistence of the men in rejecting it is the subject of much adverse criticism. Higher wages than are now offered would certainly render finished ironmaking an unprofitable, if not an altogether losing game. The course of prices is pretty much as quoted last week. Common cinder pigs are quoted 2 1/2 15s. per ton, and medium qualities in the usual proportion to that standard. For best native all-mine pigs the price is steady at 4 1/2 10s. for hot air, and 5 1/2 for cold-air makes. Messrs. Dawes and Sons have blown out one of their Withymoor furnaces, near Dudley, thus reducing the total number in operation to 69. In finished iron the transactions of the week have been unimportant, sheets being the only description commanding anything like a notable enquiry. Common (unmarked) bars are offering at 7 1/2 15s. per ton, but branded iron continues steady on the basis of 10 1/2 per ton bars.

The feature of the Coal Trade is the continued improvement in the demand for best coal, while inferior qualities are comparatively neglected. Selling prices remain pretty much as quoted a week ago.

The trial-boring for coal at Huntington, near Stafford, is now an assured success. We briefly mentioned last week that a 5-ft. seam had been struck at the easy depth of 145 yards. This week a second seam of 16 in. has been passed through, and the bore-logs are now in fire-clay, the appearance of which is all that could be desired. The shares of the company have advanced during the week from 2 to 5 prem. The importance of the discovery now made, which virtually establishes the long-debated theory as to the correlation of the South Staffordshire and Shropshire coal fields, can hardly be over-estimated.

The directors of the Hamstead Colliery Company (Limited) have concluded a contract for the erection of an engine and engine-houses. The works will be completed about the middle of October, when the sinking of the shaft will be prosecuted with vigour.

A meeting of the Hawne Colliery Company (Limited), was held at Hales Owen, on Wednesday. The notice convening the meeting stated that the shareholders would be asked to consider the position of the affairs of the company, and to take such action as might be deemed advisable. Accompanying the notice was a circular which explained the position of the company. The purport of the circular was that at the general meeting, held on Feb. 29, it was announced that the purchase of the colliery had been completed by means of two mortgages—the first a charge of £2,000, and the second an issue of debentures to the amount of £60,000, of which the vendor, Mr. Wigginton, agreed to take £1,250, for the balance of purchase money due to him. With the remaining £18,750, of debentures the directors hoped to be able to develop the colliery with complete success. The mortgage was effected and the debentures were issued, and £1,250 worth was handed over to the order of Mr. Wigginton; and Messrs. Gilbert and Merchant, who carried on business under the style "Gilbert, Sons, and Co.," and, as to Mr. Gilbert, also under the style of "C. B. West and Co.," were instructed to dispose of the remainder for the company. Messrs. Gilbert, Sons, and Co., at the same time, undertook to supply necessary money to carry on the works, until they could place the debenture bonds. But the brokers had endeavoured to conceal from the board the fact of a large number of bonds having been sold, and the directors, crippled in their funds, had felt it their duty to call the shareholders together and lay the facts before them, more especially as the works had now progressed to a position which showed the mine to be not less valuable than represented. The Chairman (Mr. J. C. Davis) presided, and read a letter from Mr. Gilbert, dated Paris, Aug. 3, in which Mr. Gilbert promised to send a cheque for £200, by the following Tuesday, and pay over £1000. In a month on account of the company, and promising further to deposit bonds of the Calais de Cantonment, value £10,000, to be returned when he had paid £5000, to the company, and that instructions should be given to a French railway company from whom they expected a considerable amount to pay to the Hawne board bonds for from £5000, to £10,000. But none of these promises had, the Chairman said, been carried out.

Mr. Newbold said, seeing the very unsatisfactory position that the company now occupied, he should move, "That this meeting hereby resolves that a committee of investigation be appointed to thoroughly sift the present position of the company, with full power to examine all directors, brokers, managers, and servants in any capacity whatever, and to compel the production of all deeds, books, documents, letters, and papers relating to the affairs of the company; and that such committee do present their report to an adjourned extraordinary general meeting, to be held at such time and place as this meeting shall hereafter appoint, and that such committee shall consist of five members—Messrs. Edwin Booth, Joshua Jackson, George Williams, Robinson, and Eustace."—Mr. Eustace said he must decline to serve on the committee, as he lived so far away. After some discussion, in the course of which objection was taken to certain of the statements made in the circular, the motion for appointing a committee of investigation was put and carried unanimously, the names of the gentlemen to compose the committee being left for further discussion. The following gentlemen were next elected a committee—Messrs. Jackson, G. W. Robinson, T. Phillips, Alfred Fereday, and Chas.

Humphrey. The Chairman was also elected on the committee on behalf of the directors.

The committee of enquiry, appointed by the meeting on Wednesday, sat on Thursday, at the Old Bush Hotel, Dudley. All the members of the committee were present, and in attendance were Mr. De Boos, the solicitor of the company, who was employed to act on behalf of the committee, and Mr. Stubbs, of the Midland Circuit, barrister-at-law (instructed by Mr. De Boos). The committee went carefully through the books of the company; and Mr. Davis and Mr. Jarvis, two of the directors, afforded them every information respecting the circumstances and particulars of the transactions and position of the company. Mr. Wigginton, the vendor, offered himself for examination; after which the committee adjourned till Thursday next, on which day it was appointed to meet at the offices of the company, in London. As a result of this meeting, it is considered probable that the company will forthwith be placed on a sounder footing and extricated from its difficulties.

The following were included in to-day's quotations on the Birmingham Stock Exchange:—Sandwell Park Colliery, 37; Canoe and Huntington Colliery, 5 prem.; Pellall Coal and Iron, 5 dis.; Metropolitan Railway Carriage, 4 1/2 prem.; John Bagnall and Sons, 5; Chillington Iron, 5.

The North Staffordshire coal trade wages dispute has been settled by arbitration, Mr. Horatio Lloyd, Q.C., being the umpire. The masters proposed a 10 per cent. reduction. The award is for 12 1/2 per cent. reduction, so that the men lose 2 1/2 per cent. by the arbitration. The iron trade presents no change of importance either in the pig or finished department since our last notice.

Muntz's Metal Company, whose interim dividends have been restricted by the Articles of Association to 5 per cent., are now declaring one at the rate of 10 per cent. per annum for the half-year ending June 30. This is exceedingly satisfactory, considering the depressed condition of trade.

Mr. Casson, of the Round Oak Ironworks, has appealed to the Court of Chancery to grant an injunction to restrain M. Dormoy from dealing contrary to an indenture which he had entered into with him in reference to the well-known Casson-Dormoy puddling furnace. The Vice-Chancellor granted the injunction until the hearing of the suit.

The South Staffordshire Mines Drainage Commissioners have this week disposed of several important cases of appeal against the rates. Earl Dudley's rate on limestone was reduced from 3d. to 1 1/2d. per ton; Messrs. P. Williams and Son's rate on coal from 3d. to 2d.; the Patent Shaft and Axle Company were exempted; and the Moorcroft Colliery Company were reduced from 3d. to 2d. per ton. An appeal on behalf of Mr. Yardley was not entertained. Mr. Rupert Kettle presided at the Court.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Sept. 9.—So slight is the variation in trade in this district from week to week that it is difficult to avoid repetition; but there is one subject all engrossing, and it must be admitted that it is important, for upon it will depend to a great extent the relations between capital and labour in future. The difficulty in the way of the Conciliation Board meeting is not yet removed, but rather it is of greater magnitude than last week it was supposed to be. An important meeting was held at Newport, when Mr. W. S. Cartwright explained to Mr. Henry Mitchard, one of the committee appointed by the men, the nature of the objection the masters had to Mr. A. Macdonald, M.P., sitting on the board. He quoted some extraordinary utterances made by Mr. Macdonald in addressing the Miners' Association in February, which were to the effect that the mine-owners of South Wales had rendered themselves infamous by resorting to the lock-out. He charged the masters with an attempt to starve the wives and children of the men by locking the latter out after they had consented to go to work, and he wished that the names of Crawshaw, Pothergill, Davis, and others would go down to posterity with infamy, as politicians who attacked women and children deserved. So it is now made clear that Mr. H. Vivian, M.P., is not the only one who objects to sit at the board with Mr. Macdonald. Mr. Cartwright, however, assured the representative of the men that the masters had no desire to dictate to the men as to whom they should elect, but if Mr. Macdonald would say that he had made the remarks complained of in the excitement of the time, and that he would withdraw them, they would all be pleased to see him sitting on the Conciliation Board, for they regarded him as a proper representative of the men. Just an acknowledgment of error on the part of Mr. Macdonald would set matters right, and the board might set about its work, which is important, and which, Mr. Cartwright said, the masters were anxious to see accomplished, believing that it would prevent such disastrous things as strikes and lock-outs in future; but the matter having been laid before Mr. Macdonald he declines to tender any apology, seeing that he was not the man to withdraw any remark which he had carefully pre-considered, and that he thought the circumstances of the time referred to justified him in making the remarks he had made. Therefore the matter stands just as it did, and it is uncertain what the result will be. But it appears pretty clear that either Mr. Macdonald will have to retract or the men will have to appoint another representative in his stead, else the project will fall through altogether.

The improved tone which has taken place in the iron market in regard to pig-iron does not affect this district to any material extent, as the manufacture consists mainly of railway iron, for which the demand is still very slow, and the mills are but badly employed. Prices continue to weaken, but there is no great alteration to note. There is no doubt that improvement in this branch will come about very gradually, and perhaps it will be some months before there will be any material change to note. With all the care makers have taken to limit the manufacture of tin plates, the trade continues very dull, and the course does not appear to affect the market to any extent.

Steam Coals are still in good request, and there is a tolerably extensive trade doing, but prices are so low that profits are very small. The exports are above the average, but there is little doubt that if the demand were half as large again it could be met without difficulty, so much has the productive capacity of the collieries increased.

Mr. R. C. Evans and his two co-proprietors of collieries in the Rhymney Valley have been fined 10s. each for not employing an efficient man to inspect their workings every morning. The case was heard before the Caerphilly magistrates. It was alleged that two men lost their lives in consequence of the infringement of the Act.

REPORT FROM LANCASHIRE AND CHESHIRE.

Sept. 9.—There has been since last report a fair amount of business done in better qualities of coal, but the market continues in a very depressed state, and common descriptions of fuel are almost unsealable. The settlement of the dispute in the Oldham cotton trade has helped to improve the position of affairs, and there are hopes that the winter demand will be so good as to place the trade on a much better footing. The Iron Trade continues very dull, and engineering departments are agitated on questions of wages which do not at present promise an amicable settlement. There seems likely to be a dispute at Barrow by reason of a notice of a reduction of wages given by the Barrow Hematite Iron and Steel Company.

It will be remembered that during the last strike in West Lancashire some of the colliery proprietors declined to join with the other masters in the course that was taken, and continued at work while the struggle on a 10 per cent. reduction, which was eventually decided against the men, was in progress. Amongst those gentlemen was Colonel Blundell, the proprietor of the extensive works known as the Pemberton Collieries. During the past few weeks he has given notice of a reduction which will bring wages at his colliery down to the same level as those paid at the collieries where the strike took place. The notice of reduction only comes into operation to-day, and it is not yet known whether there will be any dispute on the matter or not.

The report of the directors of the Pearson and Knowles Coal and Iron Company for the past year is as follows:—In presenting their second annual report the directors have to remark that the business of the company has been carried on during the past year under circumstances of considerable difficulty. In the coal trade there was a strike of many weeks' duration, and in the price of both iron and coal there has been a continuous and heavy fall, accompanied by extensive disorganization in mercantile affairs, which has led to a contraction of trade and to increased risk. The directors are, however, able to present a report which, under the circumstances, they consider very satisfactory. The profits for the year amount to £7,500, 4s. 2d. An interim dividend at the rate of 6 per cent. per annum was paid on both the A and B shares for the half year ending Dec. 31 last, amounting to 24,750s. The directors now recommend that a dividend, free of income tax, at the rate of 8 per cent. per annum, be paid on the B shares for the half-year ending June 30 last, and the usual preference dividend at the rate of 6 per cent. per annum

on the A shares, as provided by the Articles of Association. The dividend, as above, will amount to £1,033, 10s. 6d., and there will remain a sum of 21,731, 4s. 2d. to be added to the reserve fund, which will then stand at 25,000, and that the balance, 17,711, 4s. 2d., be carried to the next account." The report has been adopted by the shareholders, and the recommendation of the directors agreed to.

The directors of the Wigan Coal and Iron Company in their report for last half-year say:—"There has been an increase both in the quantities raised and sold during the last six months. The prices of both coal and iron have again fallen very considerably without any reduction of wages having been made." After detailing the work in connection with new pits, the report proceeds:—"The state of the iron trade has grown gradually worse during the past half-year, and there is not at present any prospect of improvement. Some cargoes of ore have been received from the company's property in Algeria, and works have been laid out there for opening up the ore, and moving it in quantity to the beach. Your directors propose that a sum of 10,000, shall be withdrawn from the company's reserve fund. This, with the profit shown on the balance sheet, will yield a dividend at the rate of 8 per cent. per annum on the paid-up capital of the company, free from income tax, which your directors recommend for adoption. The auditors' report contains the following:—The sum of 34,745s. has been deducted for depreciation during the last half-year. The value of the stocks held on June 30 is increased by being 84,731, 10s. 6d., against 67,813, 0s. 6d. held on Dec. 31, 1874. During the half-year the debtors' debt has been reduced by the payment of 29,000s., the 44,691, 4s. 1d. interest on the debenture bonds, the net profit is 65,934, 4s. 8d. for the year, which added to 14,177, 15s. standing to the credit of the profit and loss account on Dec. 31 last gives 65,351, 19s. 8d. available for dividend." The usual meeting of shareholders has been held under the presidency of the Earl of Crawford and Balcarres, and the reports adopted. The net profit for the half-year ending December, 1874, was 67,108s., and the reserve fund was then 125,000s. In the printed reports the income of expenditure account for the half-year is not given in the form usually adopted, and there is, therefore, no opportunity of comparing the items.

The miners of the Wigan district held their annual demonstration on Monday, Mr. William Pickard presided, and Mr. Macdonald, M.P., was one of the speakers.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week the market has been quiet, and no movements of special importance have taken place. Shares of iron and coal concerns are slightly firmer, though the various reports now being issued by the different companies are uniformly of a disappointing character. Those of the Marbella and Shotts Companies are given elsewhere. An extraordinary meeting of the original Hartlepool Collieries Company (Limited) is to be held on the 17th inst., to authorise the directors to raise 50,000. The report issued by the Colliery Company (Limited), near Leicester, states the total output to be 84,300 tons, and the present average output at 320 tons per day. After providing for interest on mortgages, &c., there is only a balance of 77s. to carry forward, notwithstanding that the revenue account shows a profit of 6063s. Bolckow Vaughan and New Sharlston are firm. In shares of copper concerns there has been very little done, but Cape Copper has advanced. Drake Walls is 2 to 2 1/2. East Caradon 1 1/2, sellers. East Wether, Gravelly, 1 1/2 to 1 3/4. Great Laxey, 1 1/2 to 1 3/4. Gunnsilake (Clitters), 1 1/2, buyers. Marke Valley, 1 1/2 to 1 3/4. New Consols, 1 1/2 to 1 3/4. New Pembroke, 1 1/2 to 1 3/4. West Maria and Fortescue, 1 1/2 to 1 3/4. West Poldice (6 to 7 last week) has gone to 14, buyers; owing to this shares in Killbreth, a neighbouring mine, have been asked for at 1 1/2 to 1 3/4, and have an appearance of rising. American mines are generally lower. Oil shares are firmer, Young's Paraffin being higher. Miscellaneous still tend upwards, and London and Glasgow Engineering and Iron Shipbuilding shares show a good advance, owing to the very satisfactory dividend announced. A detailed list of the several day's business follows:

On THURSDAY last a small business was done. Benhar (all paid) done at 10 1/2, closing 10 1/2 to 10 1/2. New (5/2 paid) shares done at 10 1/2, 10 1/2, 10 1/2. Bolckow Vaughan A done at 47 1/2, 47 1/2. Canadian Copper Pyrites done at 35s., closing 35s. to 36s. Chillington Iron, 4 1/2 to 5. East Caradon in demand, at 1 1/2 to 1 3/4. Emma done at 33s. and 34s., closing at these prices. Gunnsilake (Clitters) at 1 1/2 to 1 3/4. London and Glasgow Engineering better, at 21, buyers; the dividend here to day has been recommended at the rate of 10 per cent. per annum, with a balance of over 3477s. This compares with 15s. per cent. at this time last year; but, taking into account the state of the shipbuilding and engineering trades in the interim, the present dividend must be considered very satisfactory. Lochore and Caplethrae, 5 to 5 1/2. Marbella done at 81s., closing 80s. 6d. to 81s. 6d. Monkland ordinary, 48s. to 50s. New Sharlston preferred 3 1/2 to 4 1/2. Omos and Cleland, 42s. 6d. to 43s. 6d. Peruvian Nitrate higher, at 1 1/2 to 1 3/4. Richmond done at 10 1/2 to 10 3/4, closing 10 1/2 to 10 11-16ths. Tharish, 19 1/2 to 19 3/4. Young's Paraffin done at 5. West Wheel Franes, 8 to 8 1/2. Scottish Wagon (all paid), 10 1/2 to 10 3/4.

On FRIDAY the market remained inanimate. Bolckow Vaughan A done at 47 1/2, closing 46 1/2 to 47 1/2. Canadian Copper Pyrites higher, at 1 1/2 to 1 3/4. Chillington Iron, 4 1/2 to 5 1/2. Colorado Terrible Lode, 2 1/2 to 3. Drake Walls, 2 to 2 1/2. East Caradon, 1 1/2 to 1 3/4. Great Laxey, 1 1/2 to 1 3/4. Glasgow Port Washington (all paid) higher, at 74s. to 76s. Gunnsilake (Clitters), 1 1/2 to 1 3/4. Lochore and Caplethrae, done at 5 1/2. Marbella, 81s. 6d. to 83s. New Pembroke firm, 1 1/2 to 1 3/4; at the meeting there was not a call made, and the mine is improving for copper. Omos and Cleland, 42s. to 44s. Richmond opened at 10 1/2, but became very flat, business being done as low as 9 1/2, closing better, about 9 1/2 to 9 3/4. This fall owing to the prevailing crisis in California and the dividend being postponed, but the factory circular on these matters has been issued by the company. South Croft, 20 to 21. South Roakear lower, at 5 1/2 to 6. Tharish, 19 1/2 to 19 3/4. West Maria and Fortescue, 4s. to 5s. West Wheel Franes, 8 to 8 1/2. Young's Paraffin, 5 to 5 1/2. Yorke Peninsula ordinary, 7s. to 9s. Scottish Wagon (all paid), 10 1/2 to 10 3/4.

On MONDAY the market was again neglected. Australasian Mines Investment shares wanted, at 5 1/2. Battle Mountain, 2 1/2 to 3. Benhar (all paid) done at 10 1/2, closing 10 1/2 to 10 1/2. Bolckow Vaughan A, 47 1/2 to 48. Flagstaff, 1 1/2 to 1 3/4. Gunnsilake (Clitters) higher, at 1 1/2 to 1 3/4. Huntington lower, at 35s. 6d. to 37s. Killbreth firm, at 1 1/2 to 1 3/4. Lochore and Caplethrae done at 5 1/2, being 1/2 higher. London and Glasgow Engineering also higher, at 22 to 24. Marbella, 4 to 4 1/2; the report of the directors of this company for the half-year ending June 30 last has been issued. They have much pleasure in stating that the company has not been in any way involved in the recent heavy failures; no bad debts have been incurred. The long-continued depression in business, and the protracted strike and lock-out in South Wales, were a great portion of the losses which have hitherto been incurred, but the directors continue hopeful that in the company's favour, and while the regular repairs are being rapidly proceeded with by the original constructors of the pit. The ore has been conveyed during the period under review to the steamers by barges. Monkland ordinary, 45 to 47. Richmond shares done at 9 1/2 and 9 3/4, closing 9 1/2 to 10. Tharish done at 19 1/2, closing 19 1/2 to 19 3/4. West Poldice has advanced to 14, buyers. West Maria and Fortescue in demand, at 1 1/2 to 1 3/4. Scottish Wagon (all paid) remain at 10 1/2 to 10 3/4.

On TUESDAY a better business was done. Bolckow Vaughan, A shares done at 47 1/2. Cape Copper, 34 to 35. Canadian Copper Pyrites, 1 1/2 to 1 3/4. East Caradon, 1 1/2 to 1 3/4. Gravelly, 1 1/2 to 1 3/4; this is a very cheap share at present, and when an improvement takes place will rise considerably. The mine is in a good position, having fair prospects of cutting West Basset lodes on the one side and West Franes on the other. Glasgow Caradon shares firm, at 25s. 6d. to 27s. Glasgow Port Washington (all paid and pre-paid) higher, at 70s. to 80s. each. Killbreth shares again firm, at 1 to 1 1/4. Lochore and Caplethrae shares done at 5, closing 5 1/2 to 6 1/2. Marbella, 80s. to 81s. Monkland shares done at 47s., closing 46s. to 47s. New Sharlston shares better, at 4 1/2 to 5. Panulicoll, 3 1/2 to 4 1/2. Peruvian Nitrate, 1 1/2 to 1 3/4. Richmond shares opened at 9 1/2, and declined to 9 1/4, from which an improvement took place to 9 1/2 and 9 3/4, closing 9 1/2 to 9 3/4. Shotts Iron shares remain at 70, and new shares at 7 1/2. Tharish shares done from 19 1/2 to 19 3/4, closing 19 1/2 to 19 3/4. West Maria and Fortescue, 6s. to 8s. Young's Paraffin shares done at 5 1/2, closing 5 1/2 to 5 3/4. Scottish Wagon (all paid) shares higher, at 10 1/2 to 10 3/4.

On WEDNESDAY a small business was done. Benhar (all paid), 10 1/2 to 10 3/4. Bolckow Vaughan, A done at 47, Glasgow Caradon, higher, at 26s. to 28s. Great Laxey, 1 1/2 to 1 3/4. Killbreth, 1 1/2 to 1 3/4. Lochore and Caplethrae, done at 5, closing 5 1/2 to 6 1/2. London and Glasgow Engineering, done at 22 1/2, closing 24 to 25. Marke Valley, 2 1/2 to 3. Monkland, ordinary, 45s. to 48s. 6d. New Pembroke, 1 1/2 to 1 3/4. Peruvian Nitrate, 1 1/2 to 1 3/4. Richmond, done at 9 1/2, closing 9 1/2 to 9 3/4; this week's run is announced by cablegram from the mine at \$40,000. The message adds—"No. 2 furnace re-lined, starts to-night." Rio Tinto, done at 7 1/2. Shotts, unchanged, at yesterday's prices; at the annual meeting of this company, held in Leith to-day, the report was adopted; it stated:—"After paying 10 per cent. last year a sum of 450, 13s. 1d. was carried forward. The amount at the credit of profit and loss, with the above sum, at June 30 last is 1775s. 15s. 10 1/2d. The amount of the reserve fund created in 1872 by the issue of ordinary shares at a premium of 2 1/2s. 10s. added to the above 1775s. 15s. 10 1/2d., represents 15,780s. 19s. 6 1/2d., and out of it the directors recommend a dividend of 5 per cent., leaving 12,900s. 8s. 6 1/2d. to be carried forward." The Chairman said it must be gratifying to the shareholders that during the past year, which had been one of great depression in the iron trade, the company had been able to hold its own, and even do a little more. It was obvious, too, that on the slightest return of good trade a great difference would be made in the profits of the company. From gas coal alone the directors expected in the future a satisfactory return. The directors were satisfied that they had a very valuable iron manufactory in hand, and that under ordinary circumstances the results would be satisfactory. They had been making great improvements to and additions upon their furnaces and works generally, which are not yet fully completed. In reply to questions from shareholders, it was stated that the loss on Bessemer iron had all been incurred during last year, on one bought the previous year, but which had only been sold this last year after manufacturing. The sum of 45,000, placed against capital account for new works, such as sinking pits, and making of railways and machinery, would be reduced by the amount written off for depreciation—14,000s. The coal and ironstone being raised at Leith-head is turning out very well. As to the large sum of 22,838s. owing to the bank, a motion authorising the directors to borrow 20,000s. on mortgage in terms of the Act of Parliament was adopted, and the balance of 63,000s. it is estimated will be met by calls on the new shares, and sales of iron since June 30. The retiring directors and auditor were unanimously re-elected. Some conversation afterwards took place as to the expediency of issuing a half-yearly report, and having a half-yearly meeting, but the Chairman said it had been tried before and found to be of no use. It will thus be seen the Shotts Iron Company is no exception to the other shareholders throughout the country now laying their reports before the shareholders. The paid-up capital is 249,751s., and for the last five years dividends have been declared at the rates of 5, 3, 18, 35, and 10 per cent., and now 5 per cent. again, but it must be very evident that this 5 per cent. dividend will not be paid next year unless trade improves. It may be noted that the Shotts Iron Company is the only one in Scotland making Bessemer iron, having the kind of coal necessary to its manufacture. Tharish done at 19 1/2 and 19 3/4, closing at these prices. Young

Paraffin done at 55¢, closing 55½ to 57½. Scottish Wagon (all paid), 10½ to 10¾; and new (all paid) shares, 82½ to 84½.

The following are this week's prices of some stocks, shares, &c., occasionally dealt in on this market, but not quoted (with few exceptions) on any of the Scotch Stock Exchanges:—Iron, Steel, and Coal Companies: Andrew Knowles and Sons, 22½ to 23½; Bolckow, Vaughan, and Co., B. 41½ to 42½; Britannia Ironworks, 10; Cardiff and Swansea Steam Coal, 23½ to 24½; Chapel House Colliery, 3½ to 3¾; Great Western Colliery, 3½ to 3¾; Lehigh and Wilkes Barre 6 per cent. first mortgage, guaranteed by Central Railroad of New Jersey (U.S.), 89½ to 90½; Llynvi, Tondy, and Ogmore Coal and Iron, 25½ to 27½; Mersey Steel and Iron, 4½ to 5; Mwydyd Iron Ore, 3; Newport Abercrom Colliery, 3½ to 4; New Sharlston Collieries, preferred, 4 to 5; Powell's Llantwit Colliery, 1 to 2; Scottish Australian Mining, new shares, 4 to 5; South Cleveland Ironworks, 2½ to 3; Ulverston Mining, 10½ to 11; United Binnion Collieries, 3½ to 4; West Cumberland Iron and Steel, 8½ to 9½; Cop Binnion Collieries, 3½ to 4; Companies: Bedford United, 3½ to 4; Bensberg Lead, 3½ to 4; per Lead Tin, &c., Companies: Copiapo Mining, 3½; Court Grange Lead, 3½; Drake Wells, 2 to 2½; East Caradon, 1½ to 1¾; Elgar, 3½ to 4; Great Laxey, 14½ to 15; Great West Van, 3½ to 4; Gunnislake (Clitters), 13½ to 14½; Lady Constance Lead, 3½ to 4; Marko Valley, 2½ to 3½; New Consols, 1 to 1½; New Pembroke, 3½ to 4; New Quebrada, 3½ to 4; North Hendre Lead, 3 to 4; Prince of Wales, 8s. to 8s. 6d.; Plymouth Lead, 3½ to 4; Rio Tinto, 7½; Snowbrook, 4½ to 5; South Roskear, 4 to 6; West Egar Lead, 3½ to 4; West Mark and Fortescue, 3½ to 4; West Foulds, 14; West Mary Rutlings, 7½; York Peninsula Mining, 15 per cent. guaranteed preferred, 3½ to 4; Yorkshire Mining, 3 to 3½; Gold and Silver Companies: Almada Ferreira, 3½ to 4; Australasian Mines Investment, 3½ to 4; Battle Mountain, 3½ to 4; Chontales Australized, 3½ to 4; ditto new shares, 3½; Colorado Terrible, 3½ to 4; Don Pedro North del Rey, 3½; Eberhardt and Aurora, 8; Exchquer, 3½; Frontino and Bolivia, 1 to 1½; I.L.L., 3; Javali, 3½ to 4; Pestarena United, 3½ to 4; Port Phillip and Colonial, 3½ to 4; Rica, 8s. to 8s. 6d.; Santa Barbara (late Pari), 8s. 6d. to 14s. 6d.; South Aurora, 1 to 1½; Teocoma, 3½; United Mexican, 3½; Welsh, "The" Gold, 3½; Winter's Freehold, 2 to 5; Oil Companies: Flintshire Oil and Cannel, 1 to 1½; Midlothian, 3½; West Calder, 1 to 1½; Miscellaneous Companies: Aberdeen Lime, 7 to 8; Bede Metal and Chemical, 3½; ditto; Jacobson Slate and Slab, 9½ to 10½; General Sewage and Manure, 4½ to 5½; Lancashire Chemical Manure, 5½; Lawe's Chemical, 7 to 7½; Native Guano, 3½ to 4; Newcastle Chemical, 13½; ditto; North Cornwall Kaolin, 3½ to 4; Phospho-Guano A, 7; ditto B, 2; Thames Chemical, 5; and subjoined are the latest prices, &c., of those quoted on the Stock Exchanges:—

Per share.	Rate per cent.	Description of shares.	Last price.
10	10	COAL, IRON, STEEL.	
10	10	Arnstown Coal (Limited)	65½
10	10	Benhall Coal (Limited)	105½
10	10	Ditto	102½
10	10	Bolckow, Vaughan, and Co. (Lim.)	47½
10	10	Chimbley Gas Coal (Limited)	9½
10	10	Chimbley Iron Coal (Limited)	6
10	10	Ebbw Vale Steel, Iron, and Coal (Lim.)	105½
10	10	Fife Coal (Limited)	76½
10	10	Glasgow Port Washington Iron and Coal (L)	76½
10	10	Ditto Prepaid	6
10	10	Lochore and Caplethrae (Limited)	81½
10	10	Marbella Iron Ore (Limited)	47½
10	10	Monkland Iron and Coal (Limited)	5
10	10	Nant-y-Glo and Blaenau Ironworks (L)	39
10	10	Omoa and Cleland Iron and Coal (Lim.)	43s. 6d.
10	10	Scottish Australian Mining (Limited)	13½
10	10	Shotts Iron	70
10	10	Ditto New, issued at 2½ prem.	7
10	10	COPPER, SULPHUR, TIN.	
10	10	Canadian Copper Pyrites (Limited)	17½
10	10	Ditto All paid	6½
10	10	Cape Copper (Limited)	25
10	10	Dunsley Wheel Phoenix Tin (Limited)	2s.
10	10	Glasgow Caradon Copper Mining (Lim.)	26s.
10	10	Ditto New	17s. 3d.
10	10	Huntington Copper and Sulphur (Lim.)	31s.
10	10	Kapunda Mining (Limited)	7½
10	10	Panulic Copper (Limited)	23½
10	10	Russian Copper (Limited)	19½
10	10	Tharsis Copper and Sulphur (Limited)	13½
10	10	Ditto New	10s. 6d.
10	10	York Peninsula Mining (Limited)	33s.
10	10	GOLD, SILVER.	
10	10	Emma Silver Mining (Limited)	29s.
10	10	Flagstaff Silver Mining (Limited)	1
10	10	London and Glasgow Engineering & Iron Shipbuilding (Limited)	11s. 6d.
10	10	Peruvian Nitrate (Limited)	8½
10	10	Scottish Wagon (Limited)	10½
10	10	Ditto New	82s.
10	10	Interim. 1 Per share.	

Last day for this account Sept. 11; settling day, Sept. 15.

J. GRANT MACLEAN, Stock and Share Broker.

Pat Office Buildings, Stirling, Sept. 9.

THE BRYN ALYN LEAD MINING COMPANY (LIMITED).

Incorporated under the Companies Acts, 1862 and 1867, limiting the liability of the shareholders to the amount of their shares.

Capital £20,000, in 2000 Shares of £10 each.

(FIRST ISSUE OF 1500 SHARES).

Payable as follows:—

£1 per share on application.

1 " " allotment.

1 " " 1st November, 1875.

1 " " 1st February, 1876.

The remainder as and when required, and at not shorter intervals than two months, and in not larger amounts than £2 per share.

PROVISIONAL DIRECTORS.

JOHN CHILD, Esq., B.A., 21, Houghton-place,

Bradford—CHAIRMAN.

JOHN LLOYD, Esq., Hesketh, near Holywell.

Capt. JOHN PRYOR, M.E., Pen-y-Iford, Mold.

(With power to add to their number.)

MANAGING DIRECTOR.

Mr. M. HESLOP, M.E., F.A.S.L., 15, Southbrook-terrace, Bradford.

BANKERS.

THE NATIONAL PROVINCIAL BANK OF ENGLAND, Mold.

THE EXCHANGE AND DISCOUNT BANK (LIMITED), Bradford.

SOLICITOR.

Mr. ALEXANDER NEILL, Solicitor, Bradford.

AUDITORS.

H. W. and J. BLACKBURN, Commercial Bank Buildings, Bradford.

SECRETARY—(pro tem.)—Mr. J. LITTLEWOOD.

PROSPECTUS.

The company is formed for the purpose of purchasing the interest of Mr. Matthew Heslop, of Bryn Alyn, in the Bryn Alyn Lead Mine, and of carrying on and working the mine. The mine is situated in the parish of Llanarmon, Denbighshire, North Wales, in the Mold mining district, so well known for its productive lead mines. It is at present being worked by the proprietor, and he is confident that by the employment of a larger capital the produce would be very great; so satisfied is he of this that he has agreed to take the greater part of his purchase money in shares of the company.

The mine is bounded all round by well-known and productive mines, all of which have made very large returns on the capital employed. The Nant Mine, adjoining the south boundary, returned 500 tons of ore per month; and the Belgrave Mine, adjoining the north boundary, returned 200 tons of ore per month, and made their owners immensely rich, when the lead ore only sold at about 29 per ton, the price now being about 21s and upwards.

The mine comprises a large area of acres, and has traversing through it three well-known east and west master lodes, besides tributaries and cross-veins, all of which have proved productive even in the small surface workings made thereon. It is held chiefly under the Duke of Westminster, at 20s. per ton royalty; and a small parcel under Mr. Jones, at 10th per ton royalty.

Shafts are already sunk for working and ventilating the mine; two to a depth of 100 yards and 100 feet respectively, and others to a smaller depth; and several runs of ore have been followed down to the depths already attained, analogous to all the surrounding mines. Large quantities of lead have already been obtained in comparison to the small amount of work opened.

Considering the great facilities and advantages which the natural position of the mine affords for vigorous and extended mining operations being carried on, the enormous quantities of ore raised from the two adjoining mines, it is seldom that a more substantial investment is placed before the public.

It is estimated that with the employment of one-half the nominal capital at least 50 to 100 tons of lead ore per month would be raised. This would represent an estimated profit of £500 to £1000 per month, or £6 to £100 per cent.

The only contract entered into is dated 31st day of August, 1875, and is made between Matthew Heslop, the vendor, of the one part, and John Child, of Bradford, on behalf of the proposed company of the other part, and which, with the Memorandum and Articles of Association, may be seen at the offices of the solicitor to the company.

Forms of application for shares and other information may be obtained at the offices, Bradford.

Samples of lead ore, and the plans of the mine, can be seen at the

TEMPORARY OFFICES,—51, MARKET STREET, BRADFORD.

GENERAL MINING COMPANY FOR IRELAND (LIMITED).

THE VALUABLE FREEHOLD AND LEASEHOLD MINERAL AND OTHER INTERESTS, and the EXTENSIVE MINING AND MANUFACTURING MACHINERY, PLANT, and BUILDINGS, of the GENERAL MINING COMPANY FOR IRELAND (LIMITED), situate at and in the neighbourhood of SILVERMINES, in the county of TIPPERARY, within five miles of the Nenagh Station of the Great Southern and Western Railway, and within eight of the Birdhill Station on the Killarney Branch of the Waterford and Limerick Railway System, TO BE SOLD, BY AUCTION, at Silvermines, on Wednesday, the 29th day of September, 1875, and succeeding days, commencing each day at noon precisely.

The mineral sets extend over about 2000 acres, and include deposits of calamine (carbonate of zinc), silver-lead, blende, copper, sulphur, and fire clay, and are held partly in fee and partly under terminable leases; all free from dead rents, and some free from royalty, and others subject to moderate royalties, with exceptionally favourable conditions for working.

The manufacturing plant comprises everything necessary for the making of zinc oxide direct from the calamine ore, which manufacture was successfully carried on by the General Mining Company.

The mining buildings, plant, and machinery include every requisite for carrying on extensive operations, and they are now in good working order.

Detailed particulars of the lots, with lists of the buildings, plant, and machinery, and the conditions of sale can be had from the undersigned, who will be prepared to receive private offers up to within one week of the day of sale.—D. and T. FITZGERALD, Solicitors for the Liquidators, 20, St. Andrew's street, Dublin; L. STUBBERT, LL.D., THOMAS BAKER, Liquidators, 58, Abchurch-lane, London.

VALUABLE MINING PROPERTY IN THE ISLE OF MAN FOR SALE.

IN RE THE VANNIN SILVER-LEAD MINING COMPANY (LIMITED).

IN VOLUNTARY LIQUIDATION.

WILL BE OFFERED FOR SALE, BY PUBLIC AUCTION, on Tuesday, 21st September instant, the Property known as—

THE VANNIN SILVER-LEAD MINE,

One of the most promising and bona fide Mining Speculations in the Isle of Man.

The mine is situated near Ramsey, in the direct track of the Great Laxey and Great North Laxey Lodes; the principal lode (which has been found productive at surface) is in the line of the Great Laxey Lode, having a similar bearing and dip. The company's interest in the unexpired term of the lease (about 16 years) will first be put up for sale, and the purchaser will have the option of taking the Plant and Materials at the Mine at a valuation. Should the purchaser decline taking the Plant, &c., as above stated, it will subsequently be put up for sale in lots.

Sale to commence at the office of the company, 1, Albert-street, Ramsey, Isle of Man, at the hour of One o'clock P.M., when conditions will be declared.

For further particulars, apply to the Liquidator, Mr. FREDERICK SAUNDERS, 1, Albert-street, Ramsey; or to—C. B. NELSON, Advocate, Ramsey, Ramsey, Sept. 1, 1875.

HENDON SPELTER WORKS COMPANY.

TO CAPITALISTS, PROMOTERS OF PUBLIC COMPANIES, & OTHERS.

FOR SALE, in consequence of the Death of the late Senior Partner, the SPELTER WORKS, situate at Hendon, in the borough of Sunderland, in the county of Durham, now being carried on under the style of "THE HENDON SPELTER COMPANY."

The works are situated within one mile of the well-known docks of the port of Sunderland, and adjoining the Hartlepool Branch of the North Eastern Railway, with which they are connected by high and low level sidings, and thereby placed in communication with all parts of the United Kingdom. Their position, within easy distance of both the ports of Newcastle and Sunderland, is very advantageous for the cheap importation of raw material, as also the forwarding of the manufactured article either by land or sea.

The ground on which the works are built could be either bought out or sold on a yearly perpetual ground rent, and any quantity under 20 acres could be included in the sale.

Being situated in the midst of the Durham Coal Field fuel of the best description can be obtained at a cost below almost any other part of the United Kingdom. There are 19 workmen's cottages, which could be sold with the works.

The works contain 24 zinc furnaces, capable of producing 70 tons of metal a week, as also calciners, potfolds, machinery, blacksmiths' and joiners' shops, &c., of sufficient capacity for a much larger number. The works could, therefore, be doubled at a comparatively small cost.

The quality of the metal made at these works is well known, and it, therefore, commands a ready sale at the highest prices.

Attached to the high level sidings are large depots for coal, ore, &c.

The goodwill would, of course, go with the works, and they will be sold subject to all stock being taken at a fair market value.

The purchaser can also have the option of buying the CALCINING WORKS and VALUABLE MINES IN SPAIN, thus allowing of the economical and regular supply of the raw material, and saving the mineowners' and merchants' profits.

As the ore from the South of Spain generally comes as ballast for ships laden with sparite, it has been brought for this company at an average cost of 7s. per ton, sometimes as low as 4s. 6d.

Further particulars can be had on application to the company.

IN VOLUNTARY LIQUIDATION UNDER THE COMPANIES ACT, 1862.

THE NEW LLANGYNOG LEAD MINING COMPANY (LIMITED).

TO BE SOLD, BY PRIVATE TREATY, ALL the BENEFICIAL INTEREST of the New Llangynog Lead Mining Company (Limited) in the LLANGYNOG LEAD MINES, comprising all the valuable, productive, and extensive mines, veins, beds of lead, ores of lead, and other metals and minerals known collectively as the Llangynog Lead Mines, and in the reservoir, water-supply rights, easements, and interest thereto belonging, situate in the several parishes of Llangynog, Llanfyllter, Llanfyllter, Llanfyllter, and Penmont, in the county of Montgomery; and also the WHOLE of the movable PLANT and MACHINERY of the said company.

The Llangynog Lead Mines have been a highly productive and dividend-paying property. The mines, machinery, and plant are in working order, and considerable quantities of ore are now being raised.

The works may be inspected at any time upon application to the Manager at the Mines. The leases and agreements may be inspected at the offices of Messrs. LONGUEVILLE, JONES, and WILLIAMS.

All further information may be obtained, and maps of the property inspected, on application to Messrs. GEO. HASWELL and SONS, 84, Foregate-street, Chester; to HENRY DENNIS, Esq., Mining Engineer, Hafod-y-Bwch, Ruabon; or to Messrs. LONGUEVILLE, JONES, and WILLIAMS, Solicitors, Oswestry.

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TO BE SOLD, A COLLIERY ROYALTY IN NORTH WALES, close to rail or shipping port; several shafts partially sunk; coal fully proved of FOUR SEAMS of good HOUSE and STEAM COALS, in an area of upwards of 400 acres of surface. It adjoins the West Mostyn Coal Field, just successfully launched, where under seams (including Cannel) have been proved in addition to the above; so that eminent engineers state that the available coal in this royalty may be 88 feet thick.

Present holder will arrange to sell the entire to an individual or company for what it has cost him, dividing all profit made above, which, even in a normal state of the coal trade, must be large. Certain and safe surveys by eminent Staffordshire and Welsh engineers have already been made.

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for pumping on second motion; left hand cylinder, 22 in. diameter, 3 ft. 11 in. stroke; right hand cylinder, 25 in. diameter, 3 ft. 11 in. stroke; fly wheel with 12 spokes; one pair of pin wheels, with pedestals and bases on strong cast iron bed plate, with foundation bolts; fly wheel shaft, 14 ft. 6 in. long, 11 in. diameter, wrought iron; fly wheel, 12 ft. 2 in. diameter, weight about 8 tons; pinion wheels, 4 ft. 6 in. diameter; box wheels, with 13 in. soles; one double crank, with pair of driving wheels, pedestals, and bases; shaft, 13 ft. 6 in. long, 15 in. diameter; stroke of pumps, 4 ft. The shaft is wrought iron, put together in two halves, with strong bolts and keys; weight about 4½ tons; driving wheels, 11 ft. 2 in. diameter; box wheels, with 13 in. soles; one pair of legs, with ballast tail; wrought iron strap girdles, on strong cast iron bed plate, in two halves, with pedestals and bases; one pair parallel rods, red wood, 24 ft. long, 12 in. by 10 in., with all connections; bed plate for the engines, 29 ft. 6 in. long, boxed 10 in. by 9 in., 3 ft. 8 in. wide; foundation bolts, 11 ft. long, 1½ in. diameter; bed plate for L. leg, 8 ft. 6 in. by 7 ft., and 2½ in. thick; pedestals rise, 12 in.; foundation bolts, 9 ft. long, 1½ in. diameter.

ONE wrought iron WATER HEATER, 6 ft. by 6 ft. by 5 ft.

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FOR SALE, A SCHIELE'S FAN, driven by a pair of steam-

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10 h.p., with 10½ in. cylinder. 12 h.p., with 2 8½ in. cylinders.

12 h.p., with 11 in. cylinder. 14 h.p., with 2 9 in. cylinders.

14 h.p., with 11½ in. cylinder. 16 h.p., with 2 10 in. cylinders.

16 h.p., with 12 in. cylinder. 18 h.p., with 2 10½ in. cylinders.

18 h.p., with 12½ in. cylinder. 20 h.p., with 2 11 in. cylinders.

20 h.p., with 13 in. cylinder. 22 h.p., with 2 11½ in. cylinders.

22 h.p., with 13½ in. cylinder. 24 h.p., with 2 12 in. cylinders.

24 h.p., with 14 in. cylinder. 26 h.p., with 2 12½ in. cylinders.

26 h.p., with 14½ in. cylinder. 28 h.p., with 2 13 in. cylinders.

28 h.p., with 15 in. cylinder. 30 h.p., with 2 13½ in. cylinders.

30 h.p., with 15½ in. cylinder. 32 h.p., with 2 14 in. cylinders.

32 h.p., with 16 in. cylinder. 34 h.p., with 2 14½ in. cylinders.

34 h.p., with 16½ in. cylinder. 36 h.p., with 2 15 in. cylinders.

36 h.p., with 17 in. cylinder. 38 h.p., with 2 15½ in. cylinders.

38 h.p., with 17½ in. cylinder. 40 h.p., with 2 16 in. cylinders.

40 h.p., with 18 in. cylinder. 42 h.p., with 2 16½ in. cylinders.

42 h.p., with 18½ in. cylinder. 44 h.p., with 2 17 in. cylinders.

44 h.p., with 19 in. cylinder. 46 h.p., with 2 17½ in. cylinders.

46 h.p., with 19½ in. cylinder. 48 h.p., with 2 18 in. cylinders.

48 h.p., with 20 in. cylinder. 50 h.p., with 2 18½ in. cylinders.

50 h.p., with 20½ in. cylinder. 52 h.p., with 2 19 in. cylinders.

52 h.p., with 21 in. cylinder. 54 h.p., with 2 19½ in. cylinders.

54 h.p., with 21½ in. cylinder. 56 h.p., with 2 20 in. cylinders.

56 h.p., with 22 in. cylinder. 58 h.p., with 2 20½ in. cylinders.

58 h.p., with 22½ in. cylinder. 60 h.p., with 2 21 in. cylinders.

60 h.p., with 23 in. cylinder. 62 h.p., with 2 21½ in. cylinders.

62 h.p., with 23½ in. cylinder. 64 h.p., with 2 22 in. cylinders.

64 h.p., with 24 in. cylinder. 66 h.p., with 2 22½ in. cylinders.

66 h.p., with 24½ in. cylinder. 68 h.p., with 2 23 in. cylinders.

68 h.p., with 25 in. cylinder. 70 h.p., with 2 23½ in. cylinders.

70 h.p., with 25½ in. cylinder. 72 h.p., with 2 24 in. cylinders.

72 h.p., with 26 in. cylinder. 74 h.p., with 2 24½ in. cylinders.

74 h.p., with 26½ in. cylinder. 76 h.p., with 2 25 in. cylinders.

76 h.p., with 27 in. cylinder. 78 h.p., with 2 25½ in. cylinders.

78 h.p., with 27½ in. cylinder. 80 h.p., with 2 26 in. cylinders.

80 h.p., with 28 in. cylinder. 82 h.p., with 2 26½ in. cylinders.

82 h.p., with 28½ in. cylinder. 84 h.p., with 2 27 in. cylinders.

84 h.p., with 29 in. cylinder. 86 h.p., with 2 27½ in. cylinders.

86 h.p., with 29½ in. cylinder. 88 h.p., with 2 28 in. cylinders.

88 h.p., with 30 in. cylinder. 90 h.p., with 2 28½ in. cylinders.

90 h.p., with 30½ in. cylinder. 92 h.p., with 2 29 in. cylinders.

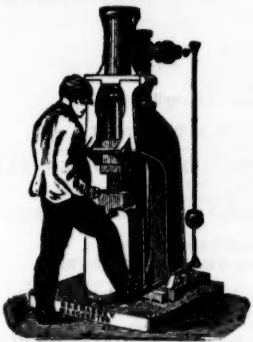
92 h.p., with 31 in. cylinder. 94 h.p., with 2 29½ in. cylinders.

94 h.p., with 31½ in. cylinder. 96 h.p., with 2 30 in. cylinders.

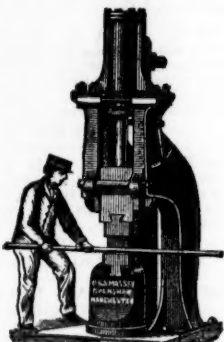
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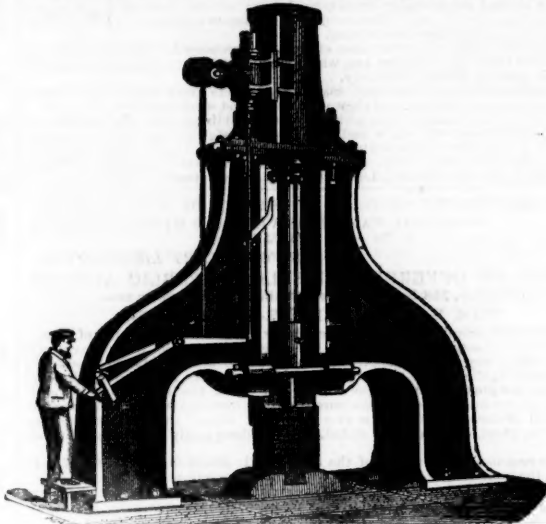
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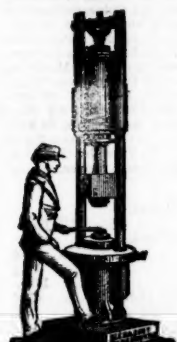
Small Hammer with Foot Motion.



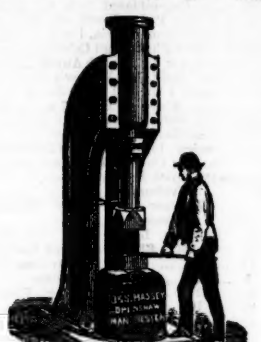
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FORGINGS of EVERY DESCRIPTION.

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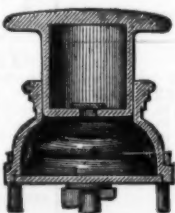
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ACCORDING TO THE NEW MINES REGULATION ACT.

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.									
Shares	Mines	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid		
1500	Alderley Edge, c, Cheshire	10 00	—	—	12 6 8	0 8 0	Jan. 1875		
3000	Bampfylde, c, Devon	1 00	—	1 1 1/4	0 2 0	0 2 0	June 1873		
5000	Black Cat, c, St. Just	3 10 0	—	—	0 10 0	—	—		
200	Botallack, c, St. Just	116 5 0	52 1/2	50 5 1/2	619 15 0	5 0 0	Aug. 1872		
10000	Brookwood, c, Buckfastleigh	1 16 0	—	—	2 2 0	0 0 0	Jan. 1872		
3348	Cargill, c, Newlyn	5 10 0	—	—	3 10 0	0 0 0	Jan. 1875		
6400	Cashwell, c, Cumberland	2 10 0	—	—	1 6 0	0 0 0	Oct. 1872		
1000	Carn Brea, c, Illogan	35 0 0	—	—	308 0 0	1 0 0	Feb. 1874		
2450	Cath. & June, c, Penrhynendrach	5 0 0	—	—	0 7 6	0 0 0	June 1873		
10240	Cock's Kitchen, c, Tavistock	21 9 0	—	—	11 17 0	0 0 0	June 1873		
4296	Dolcoath, c, Carnarvon	10 14 0	—	—	116 10 0	0 12 0	Aug. 1872		
6000	Drake Walls, c, Calstock	6 0 0	—	—	107 6 8	0 10 0	Aug. 1875		
10000	East Ballewidden, c, Sancreed	1 0 0	—	—	0 2 0	0 0 0	Feb. 1874		
6144	East Camdon, c, St. Cleer	2 14 6	—	—	14 19 0	0 0 0	Feb. 1874		
300	East Darren, c, Cardiganshire	32 0 0	—	—	229 10 0	0 1 0	Oct. 1872		
6400	East Pool, c, Illogan	0 9 9	—	—	13 13 0	0 0 0	July 1875		
1906	East Vale, c, Wendron	5 19 0	—	—	20 7 6	0 0 0	Feb. 1874		
2800	Foxdale, c, Illogan	26 0 0	—	—	80 15 0	0 10 0	Sept. 1872		
40000	Glasgow Carr, c, 10,000 £1 p. 10,000	10 0 0	—	—	0 8 4	0 0 0	Sept. 1875		
15000	Great Lacey, c, Illogan	4 0 0	—	—	18 3 0	0 0 0	July 1875		
25000	Great West Van, c, Cardigan	15 14 1/2	—	—	0 2 0	0 0 0	Oct. 1874		
5008	Great Wheel Vor, c, Helston	40 15 0	—	—	15 12 0	0 0 0	June 1872		
6400	Green Hurth, c, Durham	0 6 0	—	—	1 12 0	0 0 0	Oct. 1874		
20000	Gunnislake, c, Cardigan	2 0 0	—	—	0 3 0	0 0 0	Oct. 1875		
9800	Gunnislake (Clitters), c, Cardigan	5 5 0	—	—	0 7 3	0 0 0	June 1875		
1024	Herodsfoot, c, near Liskeard	8 10 0	—	—	62 5 0	0 15 0	Oct. 1872		
18000	Hingham Down, c, Calstock	2 5 0	—	—	4 3 0	0 0 0	Dec. 1872		
25000	Kilbuck, c, Tipperary	1 0 0	—	—	0 3 1 1/2	0 0 0	June 1873		
400	Lisburne, c, Cardiganshire	15 10 0	—	—	668 10 0	1 0 0	Aug. 1875		
11000	Melindur Valley, c, Cardigan	0 10 0	—	—	0 17 6	0 0 0	June 1874		
9000	Minera Mining Co., c, Wrexham	3 0 0	—	—	0 7 2	0 0 0	Jan. 1875		
20000	Minning Co. of Ireland, c, c, c	5 0 0	—	—	83 19 2	0 2 0	May 1875		
12000	North Hendre, c, Wales	2 10 0	—	—	0 8 0	0 0 0	June 1872		
2000	North Levant, c, St. Just	12 2 0	—	—	1 0 0	0 0 0	Apr. 1875		
27856	Old Treburt, c, ordinary shares	1 0 0	—	—	0 0 9	0 12 0	Sept. 1873		
9258	Old Treburt, c, (10 per cent. pref.)	0 10 0	—	—	0 1 4 1/2	0 0 0	Feb. 1874		
920	Pedra-dra, c, Redruth	9 17 0	—	—	0 5 0	0 0 0	Nov. 1874		
45793	Penrith, c, St. Agnes	3 0 0	—	—	3 13 6	0 0 0	July 1875		
6000	Penrith, c, St. Agnes	2 0 0	—	—	0 2 0	0 0 0	Nov. 1874		
1772	Polberro, c, St. Agnes	4 13 4	—	—	39 19 0	0 4 0	Nov. 1872		
18000	Prince Patrick, c, Holywell	15 0 0	—	—	1 12 6	0 0 0	Nov. 1872		
1120	Providence, c, Lelant	16 16 7	—	—	0 11 6	0 0 0	July 1875		
3000	Queens, c, Holywell	2 0 0	—	—	104 12 6	0 10 0	Sept. 1872		
10000	Roman Gravel, c, Salop	7 10 0	—	—	5 7 6	0 0 0	Sept. 1875		
612	South Carn Brea, c, St. Cleer	1 0 0	—	—	0 1 0	0 0 0	Sept. 1875		
6000	South Carn Brea, c, St. Cleer	1 0 0	—	—	722 0 0	0 2 0	Sept. 1875		
6123	South Cornwall, c, c, c	2 6 6	—	—	0 10 0	0 0 0	June 1872		
6000	South Darren, c, Cardigan	6 6 6	—	—	1 7 6	0 0 0	July 1875		
10000	St. Pr. Patrick, c, (8000 sh. issued)	1 0 0	—	—	1 6 0	0 0 0	Nov. 1870		
8771	St. Just Amalgamated, c	1 0 0	—	—	0 0 0	0 0 0	Apr. 1875		
12000	Tankerville, c, Salop	8 10 0	—	—	3 18 0	0 0 0	Aug. 1875		
6000	Tincroft, c, Pool, Illogan	6 0 0	—	—	48 8 6	0 0 0	Aug. 1875		
15000	Trevel, c, t, Bodmin	2 0 0	—	—	9 11 0	0 0 0	Mar. 1874		
4000	Trumpet Consols, c, Helston	7 10 0	—	—	0 1 0	0 0 0	Nov. 1872		
15000	Van, c, Llanidloes	4 5 0	—	—	15 4 0	0 0 0	July 1875		
3000	W. Chiverton, c, Perranzabuloe	12 10 0	—	—	82 17 6	0 13 0	July 1875		
512	West Treguise, c, Redruth	95 10 0	—	—	0 10 0	0 0 0	Aug. 1875		
612	West Basset, c, Illogan	27 3 9	—	—	3 12 6	0 0 0	Oct. 1875		
2048	Wheel Jane, c, Kea	6 2 6	—	—	638 10 0	1 10 0	Aug. 1875		
4296	Wheel Kitty, c, St. Agnes	2 13 0	—	—	11 5 0	0 0 0	July 1875		
896	Wheel Margaret, c, Holywell	5 4 6	—	—	11 19 6	0 2 6	Dec. 1874		
80	Wheel Owles, c, St. Just	56 5 0	—	—	82 2 8	0 0 0	May 1872		
6000	Wheel Prussia, c, Redruth	2 0 0	—	—	622 10 0	0 4 0	Aug. 1872		
10000	Wheel Russell, c, Tavistock	1 0 0	—	—	0 1 0	0 0 0	Dec. 1874		
10000	Wheel Whimper, c, Warleggan	1 0 0	—	—	0 16 0	0 0 0	May 1872		
25000	Wicklow, c, c, c	2 10 0	—	—	62 9 0	0 2 6	Mar. 1875		
10000	Wye Valley, c, Montgomery	3 0 0	—	—	0 6 0	0 0 0	Aug. 1875		

FOREIGN DIVIDEND MINES.

Shares	Mines	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid		
85500	Almaden, c, Spain	2 0 0	—	—	1 7 9	0 2 0	Mar. 1875		
80000	Almaden, c, Spain	1 0 0	—	—	0 5 3	0 10 0	Mar. 1875		
20000	Australian, c, South Australia	7 7 6	—	—	0 15 6	0 0 0	July 1875		
10000	Battle Mountain, c, (6240 part pd.)	2 0 0	—	—	0 10 0	0 10 0	Nov. 1872		
10000	Birdseye Creek, c, California	4 0 0	—	—	0 14 0	0 0 0	June 1874		
10000	Burgess, c, Germany	10 0 0	—	—	0 17 6	0 0 0	July 1872		
20000	Cape Copper, c, So. Africa	5 0 0	—	—	55 0 0	0 0 0	Oct. 1872		
4000	Cedar Creek, c, California	7 0 0	—	—	20 15 0	0 0 0	June 1875		
8000	Central American Association	0 16 8	—	—	0 5 0	0 0 0	June 1875		
10000	Chicago, c, Utah	10 0 0	—	—	112 0 0	0 4 0	May 1875		
21000	Colorado Terrible, c, Colorado	0 16 7	—	—	0 13 6	0 0 0	Jan. 1875		
100000	Don Pedro North del Rey	0 16 7	—	—	2 8 9	0 2 0	Mar. 1872		
2500	Eberhardt and Aurora, c, Nevada	10 0 0	—	—	1 0 0	0 0 0	July 1871		
5000	Emma, c, Utah	20 0 0	—	—	3 10 0	0 0 0	Dec. 1872		
10000	English and Australian, c, B. Aust.	2 10 0	—	—	2 10 0	0 2 6	Mar. 1875		
15000	Ferguson, c, California	2 0 0	—	—	0 3 0	0 0 0	Apr. 1872		
30000	Flagstaff, c, Utah	10 0 0	—	—	4 2 0	0 0 0	July 1875		
10000	Fortuna, c, Spain	2 0 0	—	—	0 14 0	0 0 0	Mar. 1875		
8000	Gold Run, c, Spain	1 0 0	—	—	0 2 4	0 0 0	Jan. 1872		
6000	Kapunda Mining Co., Australia	1 0 0	—	—	0 14 0	0 0 0	July 1873		
20000	Last Chance, c, Utah	1 0 0	—	—	14 19 2	0 5 0	Mar. 1875		
15000	Linares, c, Spain	5 0 0	—	—	0 10 0	0 0 0	July 1875		
65000	London and California	3 0 0	—	—	0 10 0	0 0 0	July 1875		
7851	Lusitania, Portugal	2 10 0	—	—	1 11 6	0 0 0	Dec. 1872		
15000	Mammoth Copper, c, Utah	10 0 0	—	—	0 5 0	0 0 0	Dec. 1872		
6000	Mountain Chief, c, Utah	10 0 0	—	—	0 4 0	0 0 0	Jan. 1873		
18000	Prussian Mining & Ironworks, c, t	80 0 0	—	—	6 0 0	0 0 0	July 1873		
10000	Pontgibaud, c, France	20 0 0	—	—	19 11 0	0 11 0	June 1875		
10000	Port Phillip, c, Chiles	1 0 0	—	—	0 8 0	0 0 0	Jan. 1872		
64000	Richmond Consols, c, Nevada	5 0 0	—	—	2 14 0	0 0 0	May 1875		
120000	Scottish Australian Mining Co., t	1 0 0	—	—	12 1/2	0 0 0	May 1875		
112500	Sierra Buttes, c, California	1 0 0	—	—	1 14 0	0 0 0	Nov. 1875		
60000	South Aurora, c, Nevada	2 0 0	—	—	0 14 0	0 0 0	Nov. 1875		
225000	St. John del Rey	8 0 0	—	—	0 14 0	0 0 0	Nov. 1875		
10000	Sweetland Creek, c, California	400 410	—	—	20 p. cent.	for year	June 1875		
20000	Tolima, c, (6000 sh. are £5 f. pd.)	4 0 0	—	—	3 2 0	0 2 0	Sept. 1875		
15000	Western Andes, c, (New Granada)	5 0 0	—	—	1 19 4	0 3 0	Apr. 1875		

NON-DIVIDEND FOREIGN MINES.

Shares	Mines	Paid.	Last Pr.	Clos. Pr.	Last Coll.
3000	Anglo-Australian, c, Victoria*	2 10 0	—	—	Sept. 1873
30000	Blue Tent, s, Peru* (£10 shares)	10 0 0	—	—	—
50000	Branigan, s, California	5 0 0	—	—	—
12000	Camp Floyd, s, Utah	0 15 0	—	43 5	—
80000	Cesena Sulphur Company, Romanga, Italy	10 0 0	—	—	—
60152	Chontales, c, s, Nicaragua*† (and 13,542 of £1 lss.)	10 0 0	—	—	—
6000	Clifton, s, Colorado*	2 0 0	—	3 5	—
10000	Crescent, s, Plumas County, California*	10 0 0	—	—	Feb. 1873
100000	Cuiaba, s, Minas Geraes, Brazil*	0 17 6	—	—	—
10000	Douglas, s, Georgetown, Col.	5 0 0	—	—	June 1873
35000	Excellior Hydraulic Gold Washing Co., California*	5 0 0	—	—	—
50000	Exchequer, s, c, California*	1 0 0	—	—	Dec. 1873
50000	Frontal and Bolivia, s, New Granada*†	2 0 0	—	1 5	—
50000	General Brazilian, s	1 0 0	—	—	—
10000	Goetz Tunnel Co., Georgetown, Col.	1 0 0	—	—	—
40000	Holcombe Valley, s, c, California	7 0 0	—	—	—
6000	Hornachos, * s, c, (£10 shares) Spain	1 0 0	—	—	—
20000	Imperial Brazilian Collieries, Brazil*	10 0 0	—	—	—
20000	Independence, c, California*	5 0 0	—	—	—
20000	I. X. L., s, c, California*	5 0 0	—	2 5	—
50000	Javali, s, Nicaragua*	5 0 0	—	—	—
12000	Lancaster, * l, s, Viscaya, Spain (£2 shares)	1 12 6	—	3 5	—
75000	Malabar, s, Colombia* (85000 issued)	1 0 0	—	—	Sept. 1873
4000	Malaga, l, Spain*	1 0 0	—	3 5	—
40000	Malaga, s, Colombia*	10 0 0	—	—	—
12000	Menzenberg, s, c, Honnef, Germany*	1 0 0	—	3 5	—
6000	Monte Loreto, s, c, Italy*	5 0 0	—	—	—
15000	New Pacific, s, c, Nevada*	5 0 0	—	—	—
60000	New Quebrada, c, Venezuela*	0 10 0	—	3 5	—
80000	New Rosario, s, Mexico*	5 0 0	—	4 33 4	—
20000	New Zealand Kapanga, s, Coromandel*	1 0 0	—	3 5	—
10000	N. Island, * l	5 0 0	—	1 5	—
20000	No. American, c	10 0 0	—	—	—
50000	Panulidillo, c, Chile*† 280000 debentures	4 0 0	—	—	—
50000	Pastorena United, s, Italy*	4 0 0	—	1 5	—
60000	Rica, s, Colombia* (40000 issued)	2 0 0	—	3 5	—
100000	Rio Tinto, * c, Huelva, Spain	1 0 0	—	3 5	—
100000	Rosa Grande, s, Brazil*† (£1 shares)	10 0 0	—	7 5	—
32500	Ruby Consolidated, s, Nevada*	0 19 0	—	—	—
30000	Russian, c, Orenburg and Uta*†	10 0 0	—	—	—
25000	San Pedro, c, Chile*	10 0 0	—	2 5	—
40000	Santa Barbara, * s, Brazil	2 0 0	—	1 5	—
10000	Silver Mine, c, Colorado*	0 5 6	—	3 5	—
87500	Snowdrift, c, Colorado*	1 0 0	—	—	Mar. 1873
28000	St. Lawrence, s, c, California	5 0 0	—	—	—
20000	Trecoma, s, Utah*	5 0 0	—	—	—
20000	Thornhill Reef, s, Austrasia*	10 0 0	—	3 5	—
14016	United Mexican, s, Mexico*†	1 0 0	—	3 5	—
24000	Victoria, s, c, Utah*	28 12 5	—	3 5	—
15000	Yorke (London)*, s, Australia (25,000 sh. lss. p.t.)	5 0 0	—	3 5	—
70000	Yorke Peninsula, c, South Australia	1 0 0	—	—	—
40000	Yorke Peninsula, c, South Australia Preference	1 0 0	—	3 5	—
			1	5	—

I have made calls since last dividend